

375
M69s
1911

State Course of Study

FOR THE

Rural and Graded Schools

IN THE

STATE OF MISSOURI

1911

Revised by
WM. P. EVANS
State Supt. Public Schools.

APPENDED:

List of Library Books From Which School Libraries Must be Selected.

THE HUGH STEPHENS PRINTING COMPANY,
JEFFERSON CITY, MISSOURI.



SUGGESTED DAILY PROGRAM FOR STUDY AND RECITATION.

Begin.	Time. Minutes.	Recitation Program.	Study Program.			
			Class D, Years 1-2.	Class C, Years 3-4.	Class B, Years 5-6.	Class A, Years 7-8.
8:50.....	10	Opening Exercises and Music, All.....	Reading.....	Reading.....	Reading.....	Reading.....
9:00.....	20	A Arithmetic.....	Reading, 2.....	Reading.....	Reading.....	Grammar.....
9:20.....	10	D Read, Gr. 1.....	Reading, 2.....	Reading.....	Reading.....	Grammar.....
9:30.....	10	D Reading, Grade 2.....	Board work, 1.....	Reading.....	Reading.....	Grammar.....
9:40.....	15	C Reading.....	Board work.....	Arithmetic.....	Reading.....	Grammar.....
9:45.....	15	B Reading.....	Reading and Spelling.....	Arithmetic.....	Arithmetic.....	Grammar.....
10:10.....	20	A Grammar.....	Play.....	Arithmetic.....	Arithmetic.....	Grammar.....
10:30.....	10	RECESS.				
10:40.....	10	D Reading, Grade 1.....	Reading, 2.....	Arithmetic.....	Arithmetic.....	History and Government
10:50.....	10	D Read, & Spell, Gr. 2.....	Board work, 1.....	Arithmetic.....	Arithmetic.....	History and Government
11:00.....	12	C Arithmetic, Grade 1.....	Seat work.....	Arithmetic, 4.....	Arithmetic.....	History and Government
11:10.....	13	C Arithmetic, Grade 4.....	Seat work.....	Geog. and Nat. Study, 3.....	Arithmetic.....	History and Government
11:25.....	15	B Arithmetic.....	Reading and Numbers.....	Geog. and Nat. Study.....	Geog. and History.....	History and Government
11:40.....	20	A History and Gov't.....	Play.....	Geog. and Nat. Study.....	Geog. and History.....	History and Government
12:00.....	60	NOON.				
1:00.....	5	Music, All.....	Read. and Nat. Study.....	Read. and Nat. Study.....	Geog. and History.....	Ag. or Physiology.....
1:05.....	15	C Geog. and Nat. St.....	Read. and Nat. Study.....	Read. and Nat. Study.....	Geog. and History.....	Ag. or Physiology.....
1:20.....	15	D Read, N. & N. St.....	Board work.....	Read, Lang. and Spell.....	Geog. and History.....	Ag. or Physiology.....
1:35.....	15	A Agr. or Phys.....	Board work.....	Read, Lang. and Spell.....	Geog. and History.....	Geography.....
1:50.....	20	B Writing or Drawing, All.....	Play.....	Read, Lang. and Spell.....	Geog. and History.....	Geography.....
2:10.....	15	C Geog. and Hist.....				
2:25.....	10	RECESS.				
2:35.....	15	C Read, Lang. and Sp.....	Manual work.....	Manual work.....	Nat. S. or Physiology.....	Geography.....
2:50.....	15	A Geography.....	Manual work.....	Manual work.....	Nat. S. or Physiology.....	Reading and Spelling.....
3:05.....	10	B Nat. S. or Phys.....	Manual work.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:15.....	10	D Story Hour, Gr. 1.....	Language, 2.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:25.....	10	D Story Hour, Gr. 2.....	Language, 1.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:35.....	20	A Read and Spell.....	Dismiss or Play.....	Dismiss or Play.....	Lang. and Spell.....	Arithmetic.....
3:55.....	15	D Lang. and Spell.....				

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The person charging this material is responsible for its return to the library from which it was withdrawn on or before the **Latest Date** stamped below.

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.

To renew call Telephone Center, 333-8400

UNIVERSITY OF ILLINOIS LIBRARY AT URBANA-CHAMPAIGN

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			Class D, Years 1-2.	Class C, Years 3-4.	Class B, Years 5-6.	Class A, Years 7-8.
8:50.....	10	Opening Exercises and Music, All.	Reading.....	Reading.....	Reading.....	Grammar.....
9:00.....	20	A Arithmetic.....	Reading, 2.....	Reading.....	Reading.....	Grammar.....
9:20.....	10	D Read., Gr. 1.....	Board work, 1.....	Reading.....	Reading.....	Grammar.....
9:30.....	10	D D Arithmetic, Grade 2.....	Board work.....	Arithmetic.....	Reading.....	Grammar.....
9:40.....	15	C Reading.....	Reading and Spelling.....	Arithmetic.....	Arithmetic.....	Grammar.....
9:55.....	15	B Reading.....	Play.....	Arithmetic.....	Arithmetic.....	Grammar.....
10:10.....	20	A Grammar.....				
10:30.....	10	RECESS.				
10:40.....	10	D Reading, Grade 1.....	Reading, 2.....	Arithmetic.....	Arithmetic.....	History and Governm't
10:50.....	10	D Read. & Spell., Gr. 2.....	Board work, 1.....	Arithmetic.....	Arithmetic.....	History and Governm't
11:00.....	10	C Arithmetic, Grade 1.....	Seat work.....	Arithmetic, 4.....	Arithmetic.....	History and Governm't
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11:25.....	15	B Arithmetic.....	Play.....	Geog. and Nat. Study.....	Geog. and History.....	History and Governm't
11:40.....	20	A History and Gov't.....				
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1:00.....	5	Music, All.	Read. and Nat. Study.....			
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1:20.....	15	D Read., N. & N. St.....	Board work.....	Read., Lang. and Spell.....	Geog. and History.....	Ag. or Physiology.....
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1:50.....	20	B Writing or Drawing, All.....				
2:10.....	15	B Geog. and Hist.....				
2:25.....	10	RECESS.				
2:35.....	15	C Read., Lang. and Sp.....	Manual work.....	Manual work.....	Nat. S. or Physiology.....	Geography.....
2:50.....	15	B Geography.....	Manual work.....	Manual work.....	Nat. S. or Physiology.....	Reading and Spelling.....
3:05.....	10	A Nat. S. or Phys.....	Language, 2.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:15.....	10	D Story Hour, Gr. 1.....	Language, 2.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:25.....	10	D Story Hour, Gr. 2.....	Dismiss or Play.....	Dismiss or Play.....	Lang. and Spell.....	Reading and Spelling.....
3:35.....	20	A Read. and Spell.....				Arithmetic.....
3:55.....	15	D Lang. and Spell.....				

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FOREWORD.

Jefferson City, July 1, 1911.

To the Teacher:

There are some things that I want to say to you about the making of this Course of Study and its use.

To prepare an ideal Course of Study would require a rare combination of talents, enthusiasm, broad view, fine discrimination of relative values combined with a large experience of children's powers and a careful study of their point of view. Rare indeed is the man who combines these abilities. The former qualities, joined with a knowledge of the newer thought is generally found in the teachers of special subjects in institutions devoted to training teachers, but enthusiasm often carries them far out of the reach of the average child. Hence in practice their knowledge must be tempered by the practical experience of the more humble worker. It is earnestly hoped that the present edition of the Course will be found to combine these warring elements of theory and practice, of enthusiasm and usefulness, of extent of view and clearness, of newness of thought and sanity.

All of the old Course of Study has been retained that experience would justify. Some parts have been recast and some replaced. One serious difficulty in planning this course has been a short-coming on the part of some text-books. No one can secure the best results in a one-room school without alternation. This makes it necessary for some children to take the sixth year before the fifth, the eighth before the seventh. Text-books might easily be built with these needs in view, as there is little direct dependence of mensuration upon interest; of the geography of the old world upon that of the new; of the study of the sentence as a vehicle of thought, a part of a sentence, upon the study of it as composed of certain necessary words with well defined regulations.

The text-books will not all easily fall into the divisions found here, but the adjustment is worth while. Another hindrance to the effective working out of a course of study is the universally censured habit teachers have of changing schools every year. No one can be blamed for a desire to improve himself, but do you really improve yourself if you never stay in a place long enough to show what you can do?

Each teacher, whether a beginner or not, should read the whole of this pamphlet through. It is to help him that it is prepared. Some things will seem too difficult, but each should try a part at least this year, and this effort will simplify the matter for the next. By all means get some of the aids recommended, part each year. Talk over with your county superintendent the things you do not understand at first. By this means you will be enabled to keep growing.

Your especial attention is called to the pupils' reading circle list of books, and to the plan of encouraging pupils to read the books.

(1)

THE LIBRARY OF THE

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UNIVERSITY OF CHICAGO

The list of library books has been much shortened, simplified and enriched. Call attention of your school board to the law requiring them to get some library books. Get from two to five copies of Webster's Academic Dictionary. Put off getting an unabridged until \$150 to \$250 has been spent on more necessary equipment. Before you have spent \$100 you should have three to five volumes of Champlin's Young Folks Cyclopedia. Get a primary reading chart, some good wall maps, and a globe. Ask your county superintendent where to order. Go to him with all such problems. He is yours.

Among those who have contributed valuable assistance in preparing this course of study are the following:

Miss Cora L. Boehringer in preparing the course in reading, primary language and primary nature study; Prof. G. R. Crissman in language and grammar; Prof. C. E. Marston in geography; Prof. H. C. Harvey in arithmetic; Prof. A. E. Cocke-fair, Prof. H. L. Albert, Prof. R. H. Doane and Prof. R. H. Emberson in agriculture, nature study and physiology; Prof. W. W. Thomas in writing; Prof. E. M. Violette and Prof. H. S. Moore in history and government; Miss Ella V. Dobbs in handwork; Mrs. L. G. Barker in drawing; Miss Leota L. Dockery and Prof. Simmons in games and plays; Miss Hettie M. Anthony in cooking and sewing; Prof. D. R. Gebhart in music; Miss Virginia Craig in English; Prof. C. A. Phillips in pedagogy, and many others in valuable suggestions.

Yours truly,

WM. P. EVANS,

State Superintendent of Schools

STATE COURSE OF STUDY FOR RURAL AND GRADED SCHOOLS.

INTRODUCTION.

The objects to be attained by use of this Course are: (1) To unify and harmonize the work of the schools of the State, to the end that a completely articulated system be established.

(2) To enable school officers and patrons to know more definitely what is being done in the schools by furnishing them a standard by which to measure results. This will lead to a better understanding and more thorough co-operation between teacher and patrons.

(3) To enable teachers to know when they are doing really effective teaching. A means of comparison will stimulate many teachers to greater efforts, systematize the work of some, and, to some extent, harmonize the work of all.

(4) To place before the pupils a definite amount of work to be done in a specified time, thus encouraging them to complete a course.

(5) To lead to proper gradation and better classification of the schools. To develop in pupils the habit of close observation, and to train them in expression, oral and written.

(6) To cultivate a desire for good reading and to encourage the establishment of school libraries in order that wholesome reading matter may be within the reach of every child.

(7) To provide a means by which the record of the work done by one teacher may be left in such a plain, intelligible form that the next teacher may begin at the right place and continue the work intelligently. Much time is wasted every year finding out where to begin.

(8) To suggest good methods of teaching the various subjects, and yet give ample opportunity for the personal initiative of each teacher.

(9) To place before teachers and patrons a standard for an "Approved Rural School" as an ideal toward which every rural school should advance.

The formal subjects may be taught more effectively through a proper correlation with the content subjects, such as story telling, literature, nature study and agriculture. Children in eight years of eight months each should become quite familiar with all the elementary sciences and gain a thorough acquaintance with the best literature. Such a course will contribute much toward training the powers of observation, and developing high ideals.

This Course will not measure up to the high standard of some Missouri teachers, while others will consider it too elaborate and difficult. In the preparation, the average teacher in the average one-room school has been kept in mind. This Course has been so framed that it is well adapted to any rural, village, or small city school. Every teacher in rural or town schools is earnestly requested to make an honest effort to follow its suggestions. If its provisions do not suit local conditions, change details, but follow the same general plan and labor to bring conditions in your district up to the standard set in this Course. Some teachers will

find it necessary to supplement the Course; others may be compelled to omit some parts. Let all bear in mind that a uniform system of school work is the aim, and govern themselves accordingly.

To help in carrying out this Course of Study, and in improving the rural schools in every way possible, the Department of Education has a rural school inspector who spends most of his time in the field, counseling with teachers, school officers and patrons. The work of this officer is constructive and aims at more efficient schools, and hence more efficient citizens. Whatever criticisms he may make are not for the purpose of finding fault or injuring any one, but in order to show the greater possibilities and better ways of doing the work. This work, covering one hundred fourteen counties, needs the services of five men instead of one, yet this one man stands ready to meet every call that he can. Use him freely, confer with him frankly. He will co-operate with you and the best results will be secured by giving your hearty co-operation.

ALTERNATION.

In rural schools it is necessary to combine classes in order to lessen the number of periods of recitation. Alternation is the systematic and regular union of two grades of pupils, both grades doing the work of one year in one class, while the other year's work is omitted. The next year the work omitted is taken up and the first year's work dropped. In this way each pupil does all the work of the course, but not all in the same order, and the number of classes is greatly diminished, the recitation periods lengthened and more efficient work done.

The best rural school work can not be done without alternation. Alternation is used in many high schools and also in colleges and post-graduate courses of our great universities. The rural teacher must avail himself of this valuable plan of organization. The present Course of Study has been carefully arranged so that the courses alternate easily. Take time enough to master the plan thoroughly before you begin your school.

No alternation is possible in the first and second years.

In the third and fourth years all of the work may be alternated, with the exception of arithmetic. It is not necessary that every pupil who begins to read in the third reader should begin with the first lesson. There should be only one third reader class, which should consist of pupils who have already spent a year reading in that book, and of pupils who are just beginning it. Every pupil should spend practically two years in the third reader, using as much supplementary reading as possible during the time. The language lessons are so arranged that pupils may take up the work of the fourth year before that of the third.

Also the work of the fourth year geography may be given before the third has been given. This is likewise true of the nature study work.

In the fifth and sixth years all subjects may be alternated. In 1911-12, the fifth and sixth grade classes should study the work of the fifth year, and 1912-13, the work of the sixth year. The work of these two years has been arranged so as to be practically independent of each other, and the fifth year is as difficult as the sixth year.

Fifth Year (1911-12).

Reading,
Language (sentences),
Arithmetic (fractions),
Nature Study,
Geography (New World).

Sixth Year (1912-13).

Reading,
Language (words),
Arithmetic (decimals and percentage),
Physiology,
Geography (Old World).

In the seventh and eighth years there will be no trouble whatever in making alternations all along the line. To illustrate, there are given below parallel courses of study for the seventh and eighth years, each year being so arranged as to be entirely independent of the other. The "A" class should study the seventh year work in 1911-12 and the eighth year work in 1912-13.

Seventh Year (1911-12).

Literature and Spelling,
Grammar (syntax and analysis),
Arithmetic (percentage),
History and government (to 1789, and
United States Government),
Geography (principles),
Agriculture.

Eighth Year (1912-13).

Literature and Spelling,
Grammar (etymology),
Arithmetic (mensuration),
History and Government (from 1789, and
Missouri Government),
Geography (Old World and Missouri),
Farm Management and Physiology.

Rural schools that employ two or three teachers may provide a two years' high school course on this principle by alternating the study of literature with that of rhetoric and composition; agriculture with physical geography; ancient history with medieval and modern history, or general history with American history and government. Algebra should be studied two years.

DIVISION INTO QUARTERS.

Each year's work is divided into quarters instead of months. A six months' school will have six weeks to the quarter; an eight months' school, eight weeks to the quarter. The work is outlined on the theory that in an eight months' school it may be done thoroughly, with much supplementary work, and that the essentials of the course may be done in a six months' term. Schools with short terms may need more than eight years for the completion of the course mapped out. It is recommended that no school devote less than six weeks to the quarter.

EXAMINATIONS AND WRITTEN REVIEWS.

Language has two forms, oral and written. The written form is frequently neglected, especially in rural schools. Frequent written reviews should be given; examinations should be given quarterly.

QUARTERLY EXAMINATIONS.—In view of the fact that schools are of unequal length, begin on different dates, and that examinations should not be too frequent, it is recommended that every school have written examinations on some Friday in October, December, February and April of each year. The State Superintendent will prepare questions for these examinations and furnish them to county superintendents, to be distributed by them to the teachers.

For quarterly examinations, the Department of Education will send out questions for the "A" and "B" classes. No questions will be sent for the "C" class. Each teacher can best prepare the test questions for this class himself. No examinations should be given in the "D" class.

When the rural teacher receives these questions and finds that they cover subjects or parts of subjects not studied during the quarter he should so revise the list as to make it a fair test of the work done during that period. After the quarterly examinations have been given and the papers graded the teacher should make a permanent record of all the grades of each pupil. Report cards showing the attendance, deportment, class and examination grades of each pupil, should be made out and sent to parents at the close of each quarter.

In the quarterly examinations the teacher, without marring the paper, should place above each answer, near the Roman character, its grade (on a scale of 100

for the entire paper), and at the beginning of each paper write the sum of these grades. The teacher should grade closely, considering not how much information has been given in the answer, but whether it is the exact information called for. After grading, return papers to pupils and require them to note their own mistakes. Permit no changes. After inspection, the papers should be collected and a permanent record made of the grades of each pupil.

Some of the best papers in the quarterly examinations should be taken to the township or county graduating exercises for comparison with those from other schools, and there displayed for the benefit of teachers, patrons and pupils.

FINAL EXAMINATIONS.—The final examination questions for rural graduation when received by the superintendent, should be changed, if necessary, to meet local conditions in the county. These questions should be sent sealed (to be opened the day of examination) to the teacher or committee who is to conduct the examinations. All final examinations in the county in any month should be held on the same day throughout the county. The county superintendent should set this date at least one month in advance. In some cases the dates for the entire year may be sent to teachers at one time. The final examination questions should not be opened by any teacher or committee until the morning of the examination, although they should be sent out by the superintendent a week or ten days before the date set for examination.

All papers written in the final examinations should be immediately sent to the county superintendent for grading.

In giving the examinations the following rules should be observed:

1. Teachers should see that everything is in readiness for the examination before the day arrives. Good paper and pencils, or pens and ink, should be supplied.
2. The examination should begin promptly on the morning of the day appointed.
3. The final examination questions should be opened by the teacher or committee on the morning of the examination in the presence of pupils, and written on the blackboard.
4. The pupils should not write on both sides of the paper, unless necessary to complete a subject.
5. Each answer should be numbered in Roman characters to correspond to the question, the number to be placed in the center of the page above the answer.
6. Everyone should endeavor to do neat work, to use capitals and periods properly, and to spell correctly. Good language is an evidence of scholarship.
7. These examinations, to be fair tests of the progress of the pupils and to be valuable to teachers and parents, must be thoroughly and honestly conducted. No aid whatever should be given. No questions should be answered and no suggestions made that will in any way hint at information required in the examination. The teacher should not let kind-heartedness nor desire for high marks for pupils betray him into wronging them, or their parents, by assisting them to tell that which they do not know. Consider the moral effects of such a course on both teacher and pupils. A large number of graduates is not an evidence of good school work, but the quality of the work is measured by the ability of the graduates to do more advanced work.

8. Each pupil taking the final examination should write plainly his name and address and the name of his school on each sheet of examination paper.

In the final examination questions, the seventh and the eighth grade work will both be included, but the questions on the seventh grade part of the course will be so marked. It is advised that seventh grade pupils this year (1911-12) take the questions on the seventh grade work and that these grades be held to their credit, and that in 1912-13 they be required to take only the eighth grade questions, and

the grades made on the eighth grade work and those made on the seventh grade work be averaged together to determine their final grade. By so doing a pupil passes on the subject at the close of the year in which it is studied. All pupils who desire diplomas at the close of this school year must pass on both seventh and eighth grade questions unless they have credits from last year on the eighth grade work.

The final examinations will be sent from this office about the first of January, February, March, April and May.

When the papers are graded the county superintendent should at once issue each pupil who has passed the examination successfully a small "Certificate of Completion," stating that he has passed the examination, and is entitled to receive the "Common School Diploma" at county or township graduating exercises to be held after all schools close. No pupil should receive such certificate who has not maintained an average grade of *seventy-five or above*, on all subjects outlined in the State Course of Study, the grade in no subject being *less than sixty*. These Certificates of Completion should be sent to the teachers, who should present them to their pupils at the district graduating exercises to be held at the close of their schools. These district graduating exercises, consisting of music, essays by pupils who have finished the eighth grade course, formal presentation of the Certificates of Completion, talks by patrons, etc., should be held at the close of the rural schools in the different districts. By holding exercises in the country more people are reached and more interest aroused than by any other means. In some places the teachers make these graduating exercises a sort of educational rally day. The patrons and friends of the schools come in and spend the day. The morning is devoted to oral examinations and class work, at noon a basket dinner is spread, and in the afternoon the formal graduating exercises are held. The county superintendent and town and city high school principals, and superintendents should attend as many of these district exercises as possible. The benefits to the cause of education from such meetings cannot be over-estimated. The following form of Certificate of Completion is recommended:

Certificate of Completion.

Public Schools of ——— County, Missouri.

This is to certify, That ——— has satisfactorily completed the State Course of Study for rural and graded schools in district No. —, ——— county, Missouri.

Upon presentation of this certificate the holder will be given a "Common School Diploma" at ——— graduating exercises to be held at ———, in May, 191—.

Awarded this ——— day of ———, 191—.

Signed:

County Superintendent.

Teacher.

RECORDS.

School boards should furnish books in which satisfactory records may be kept and see that the teacher leaves a permanent record of the exact amount of work done by each pupil. This will save much time for the next teacher and show that pupils who do not attend regularly and for full term cannot be promoted. Uniform records will greatly assist in the progress of the rural schools. The reverse side of the term report is arranged for an individual report of the pupils, to be left with the district clerk and filed in duplicate with the county superintendent. School boards cannot legally issue warrant for the last month's salary until the teacher presents a receipt for the term report signed by the county superintendent.

SCHOOL LIBRARY AND SUPPLEMENTARY READING.

A small school library is necessary in order that the work suggested in reading, language, history, literature and nature study may be properly done. Books selected from the Official Library List are suggested in different parts of the Course.

School boards must expend a few dollars every year for good library books and supplementary reading matter; the law demands it. It says that the directors must purchase necessary supplementary books out of the incidental fund, spending not less than five cents per child enumerated in the district. Revised School Laws, 1909.

OUTLINED COURSE OF STUDY.

Class D.—(First and Second Years.)

- a. Reading.
- b. Reading and Spelling.
- c. Language and Story Hour.
- d. Reading, Numbers and Nature Study.

Class C.—(Third and Fourth Years.)

- a. Reading.
- b. Language and Spelling.
- c. Arithmetic.
- d. Geography and Nature Study.

Class B.—(Fifth and Sixth Years.)

- a. Reading.
- b. Language and Spelling.
- c. Arithmetic.
- d. Geography and History.
- e. Nature Study or Physiology.

Class A.—(Seventh and Eighth Years.)

- a. Literature and Spelling.
- b. Grammar.
- c. Geography.
- d. Arithmetic.
- e. History and Government.
- f. Agriculture or Physiology.

For all classes.—Writing, Music and General Exercises.

Explanation.—The subdivisions in each class numbered a, b, c, d, etc., are the separate recitations that each class should have. In class D, there will necessarily be at least two divisions, one in the first reader and one in the second reader. In this work, each subdivision should recite at least four times each day, but the recitations should be only about ten minutes in length.

In class C, language and spelling should be combined. The period of recitation should be about fifteen minutes and about one-half of the time given to spelling and the other half to the phases of language work outlined for this class. In this class the geography and nature study should be combined, and about one-half of the time of each quarter should be given to each subject. The courses in geography and

nature study are so written that in much of the work, the two courses can be woven together. In some quarters, it may be best to give the first month to nature study and then the next month to oral geography. This work is done without books in the hands of pupils, but the library should be supplied with many books suitable for the pupils of this grade to read.

In class B, language and spelling should be combined. Spelling should take seven or eight minutes of the language period, three or four times a week. Geography and history should be combined. The pupils should have a text in geography and have access to many books of history stories, and easy biographies in the library. The nature study of the fifth grade should alternate with the physiology of the sixth grade.

In class A, about ten minutes two or three times a week should be taken from the literature period for spelling. History and government are combined in a continuous two-year course, so arranged that the years will alternate.

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1:05.....	15	C Geog. and Nat. Stud.....	Read. and Nat. Study.....		Geog. and History.....	Agri. or Physiology.....
1:20.....	15	D Read., N., & N. St.....	Board work.....	Read., Lang. and Spell.....	Geog. and History.....	Agri. or Physiology.....
1:35.....	15	A Agr. or Phys.....		Read., Lang. and Spell.....	Geog. and History.....	
1:50.....	20	Writing or Drawing, All.....	Play.....	Read. Lang. and Spell.....		Geography.....
2:10.....	15	B Geog. and Hist.....				
2:25.....	10	RECESS.				
2:35.....	15	C Read., Lang. and Sp.....	Manual work.....		Nat. S. or Physiology.....	Geography.....
2:50.....	15	A Geography.....	Manual work.....	Manual work.....	Nat. S. or Physiology.....	Reading and Spelling.....
3:05.....	10	B Nat. S. or Phys.....	Manual work.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:15.....	10	D Story Hour, Gr. 1.....	Language, 2.....	Manual work.....	Lang. and Spell.....	Reading and Spelling.....
3:25.....	10	D Story Hour, Gr. 2.....	Language, 1.....	Manual work.....	Lang. and Spell.....	
3:35.....	20	A Read. and Spell.....	Dismiss or Play.....	Dismiss or Play.....		Arithmetic.....
3:55.....	15	B Lang. and Spell.....				

Note I.—The play period suggested for the first and second grades can be used only in warm, fair weather. The manual work and the easier subjects should be placed in the afternoon, and the heavier work in the forenoon.

Note II.—It is suggested that the four lower grades be dismissed at 3:35 p. m., for children of that age are not able to study well late in the afternoon. In some districts, it may not be feasible to dismiss them as here suggested; in such case the teacher should retain them until the close of the school day.

READING.

Reading is the most important of the school subjects, for by means of it the child comes into possession not only of the treasures of the world's literature, but also makes advancement in the various fields of study. Reading, for its own sake, just as a mechanical exercise, is of no value. The objects in teaching reading are, (1) to give the pupil the power to secure from the written or printed page an intelligent and appreciative knowledge of the thoughts of others as found in literature, and (2) to give him the power to impart to others the knowledge thus gained, in a clear, sympathetic and pleasing manner.

It is not well to be subject to any special system of reading. Make use of the best in all as it fits the needs of your situation. (1) *Intelligent* reading, the result of working for *thought*, and (2) *fluent* reading, the result of ability to scan the line or page quickly and to use the voice effectively, both furnish their problems for each year. The pupil should show steady growth in his reading from year to year.

Much attention should be given to *silent* reading, a side which has been much neglected. It is the sort of reading for which the pupil has most use during his school career, and in all after life. Much more reading could be accomplished all through the school course if provision is made for increased power in silent reading.

From the standpoint of method of work, the school must provide for both *intensive* and *extensive* work. (1) Intensive reading deals with the *new difficult material* in which children are *learning methods of work* and in which they are gaining conscious increase in power. (2) *Extensive* reading includes most *supplementary* reading, the reading of *library books* and *magazines*. There should be much of this work done from the first and an increasing amount each year. *Supplementary* reading should have a distinct purpose and a close relation to other school interests.

All literature used should be especially suited to the interests and development of the children. The material of readers and of books that are not literary wholes should be selected and arranged according to seasons and to present interests. There should be such *variety* of material that children become acquainted with the different types of literature—poetry, prose, narrative, description, essay, etc.

Habits of work are important from the beginning. In the primary, this is taken care of by several class periods daily for reading. Above the primary, *assignment* of work must be very definite as to what is expected by way of preparation: (1) Words to be looked up for pronunciation or meaning; (2) allusions to be explained; (3) questions of fact to be verified; (4) questions on interpretation; (5) maps or diagrams needed, etc. For children to grow in ability to study literature, it is necessary that they be shown the possibilities of aid available in dictionaries and reference books, and in pictures and notes.

All the English work of the elementary school should be considered a unity. There is much material in the field of literature which is used in both the reading

and language hour. In the case of young children there is much that is within the range of their appreciation and that is developmental for them that they cannot yet read for themselves. This means that the teacher must be familiar with child classics and must cultivate the art of story-telling in herself and in the children. (See suggestions under language work). In this way the teacher will become a real lover of children's literature and will be able to penetrate much closer into the interests of child life.

References for Teachers of Reading.

- *Bates—Talks on Teaching of Literature.
- *Carpenter, Baker and Scott—The Teaching of English.
- *Chubb—The Teaching of English.
- *Clark—S. H.—How to Teach Reading in Public Schools.
- *Briggs—Coffman—Reading in Public Schools.
- Colby—Literature and Life in School.
- Cox—Literature in the Common Schools.
- Huey—Psychology and Pedagogy of Reading.
- MacClintock—Literature in the Elementary Schools.
- *McMurry—Special Method in Reading for the Grades.
- Sherman & Reed—Essentials of Teaching Reading.
- *Tappan—The Story Hour.

Every teacher of reading should purchase one or two of the above books each year until he has at least one-half of them in his library.

Class D.—First Year.

Reading should not be begun with the idea of learning to read just for itself. The very youngest children will be eager to read because they will in that way *find out* something new and interesting, and can *amuse themselves* with stories they already know, and finally, because they can *entertain* others by *reading* them aloud.

Motivation of this sort influences the *attitude* of the child toward reading and his *manner* of reading from the beginning, and a little later it controls his *method* of study.

The *mechanics* of reading and the overcoming of difficulties are present in the teacher's planning and in her method of securing results, but should *never* be in the *foreground* of the *child's activity*.

The *method* of work should be a *combination* of *sentence*, *word* and *phonic* methods. Charts prepared by the teacher are helpful. *Several short periods* per day for reading are much better than to work too long at any one period. With so many sources upon which to draw it will not be difficult to have variety in the work. Keep all *word drills* and *phonic exercises* in a *separate period* from the reading periods, but *make application* of such work *as need arises* in the reading class.

Motor activity in the form of *doing* in response to silent reading of directions and in *dramatization* of the stories and activities about which they are to read is most valuable in the *joy* it gives to the work, the alertness it arouses and in the *good expression* in reading which comes as a natural result.

FIRST QUARTER.—I. Reading.

- I. *Material*.—Interesting topics chosen from literature, nature study, history, home experiences, songs, etc.
 - a. *Nursery rhymes*, as Jack and Jill, Little Boy Blue, Little Miss Muffet, Little Jack Horner.

- b. *Repetition stories*.—The Old Woman and Her Pig. The Little Red Hen. Little Black Sambo.
 - c. *Conversations* about *pets*.—The dog, the cow, the cat, the rabbit.
 - d. *Conversations* about simple *nature* interests.—The robin, the dandelion, the wind, birds, September.
 - e. *Conversations* about games, toys.—Ball, top, doll, Hide the Bell, Cat and Mouse.
 - f. *Conversations* about *excursions* (or *walks* to and from school). What we saw. What we did.
2. *Method*.—Blackboard work based upon conversation lessons.
- a. Conversations should be simple, brief, lively, and interesting. Use pictures, objects or drawings as aids.
 - b. The most suggestive thoughts written on the blackboard in simple, brief, child-like terms. Use large, plain script. (The teacher's preparation of simple sentences precedes the lesson). The children's simple responses to questions will be used for the board work, but modified to suit the needs of the class. (Necessity of good questions to bring good responses).
 - c. Develop the sense that every *sentence* tells something. Read the *sentence* as a *whole*, not word-by-word.
 - d. Observe the following order for the year's work.—*Sentence, word, phonics, letter*.
 - e. Use only good sentence forms and punctuate just as carefully as for older children. Select *words* and *phrases* and repeat many times in different sentences, always with a live interest.
 - f. Provide for *silent* reading by having children show that they have the thought—by *doing*. Run, hop, skip, bring, find, take. Play game by directions.
- II. **Phonetics**.—Very little this first quarter. Pronounce simple words slowly until children recognize *initial* and *final* consonants.
- III. **Word Study**.—Sight or "flash" work with important words. Simple devices like climbing the ladder.
- IV. **Seat Work**.—All seat work should have a *definite end* in view, and after the time allowed for it should be *inspected* by the teacher to see if it has been accomplished. Good habits should be formed.
- Material*.
- a. Cards with *sentences* that may be arranged to make a story.
 - b. Cards with single *words* to be arranged in *sentences*. They may make (1) Sentences as found on the board, or (2) Their own. (Little with *letters* this quarter).
 - c. *Illustrations* of stories, sentences or words. Large paper, big lead pencils, crayola, blackboard, paper cutting, clay, paper folding. (Send to A. Flanagan, Chicago, Ill., for catalogue of seat work materials. A wide awake teacher can prepare much *educative* materials at small expense).
- V. **Primers and first readers**.—In many communities children come to school the first day or first week with their new books. As they are not to use these for some weeks, it will be best for the teacher to write the children's names in these books and to put them away in her desk. Pass them once or twice per week to the class. Show them *how to use a book*. Note pictures of things that have been the basis of their board lessons. Note *familiar sentences* and *words* in the first few pages. Pass other readers, sample copies, story books—at a seat

period, to satisfy child's love for a book. This procedure furnishes a happy period, and inculcates right habits. There will be no marked and badly torn books.

- VI. **Results.**—Children will be *eager to read*. They should learn *about fifty words* this quarter. Many of them will be the first ones used in the books they are to take up for study. Their *main interest* will be in what *the story or page tells*—not in mastering words.

SECOND QUARTER.—I. Reading.

I. Material.

- a. Beginning reading in two books, either a primer and first reader, or *two first readers*.
- b. Continue *conversations* and *board work about other interests* (nature stories) at one period per day.

2. Method:

1. *Book reading* lessons.—Simple *conversation* about the pictures. Write *sentences* from conversation and from *book on the board*. Find sentences and words in the book.
2. Silent reading.—“Read a sentence to yourself and tell me what it says.”
3. Several of the first pages may be read without much preparation, if the work of the first quarter prepared for it.
4. If possible, have *both books* the children are to read on hand at once. Do not read all of one book before beginning the next. *Read the first third of each book this quarter.*

II. Phonetics.

1. *Material.*—Sounds of most commonly used *consonants* and *long* and *short vowels*. No diacritical marks.

2. Methods.

- a. Teach the following sounds—
f, s, t, p, c, h, m, b, l, n, d, a, e, i, o, u.
- b. Present *letter* and *sound* at same time. Games and story associations as the cross cat who says, “f-f” may be an aid in first producing the sound.
- c. *Present* and *drill* in separate period. *Apply* in attacking difficulties in reading period. Keep *lists* on chart or board. Prepare *cards* with letters for “flash” work.

- III. **Word Study.**—Continue drills in separate period only on words that present some difficulty that cannot be reached by frequent occurrence of them in reading lessons.

- IV. **Seat Work.**—a. Similar to that of preceding quarter. More *sentence building* with *words*.

- b. (Writing has been begun in the language period). Copy sentences and words from the board.
- c. Teacher prepare cards with simple mounted pictures—taken from magazines or old readers. Paste white strip at top or bottom of card on which *write* a name or *action word*, or short sentence. Let children copy.

THIRD QUARTER.—I. Reading.

- I. *Material.*—a. *Second third of each book*.

- b. Conversations based on other interests.

- c. Teacher read portions of “Sunbonnet Babies.” Let children enjoy the pictures and read easy portions.

2. *Methods.*
 - a. Continue frequent use of board, and chart specially prepared in same way as before.
 - b. For every new lesson the class period should be a *study* lesson. Conversation. Study pictures. Record thoughts on board. Find sentences in book. Silent reading. Read parts aloud.
 - c. Read in answer to questions that bring *good expression—emphasis.*
 - d. Let some child read whole lesson aloud. Rest of class sometimes close books.
- II. **Phonetics.**—I. *Material.*
 - a. Continue work begun.
 - b. Teach also r, w, j, g (hard), v, y.
 - c. Teach simple sight words with short vowels—as *phonograms, an, in, on, it, ill.*
2. *Method.*—Note how many words found in their readers are made up of one *initial sound* plus these *phonograms*: m-an, r-an; t-in, p-in; h-it, s-it.
- III. **Word Study.**—"Flash" work with simple words. Children *write* them on board afterwards, or on paper with *large lead* pencil. This is beginning *spelling.*
- IV. **Seat Work:**
 1. Illustrative material as before.
 2. Copy words and sentences.
 3. Build *special* words with *alphabet cards.*
 4. Build words with phonograms; all they can on a single phonogram. c-an, D-an, f-an, m-an, N-an, p-an, etc.
 5. Read out of supplementary books silently. Study pictures.

FOURTH QUARTER.—I. **Reading.**

- I. *Material.*
 - a. Complete each of the books.
 - b. Teacher and children read portions or all of "Overall Boys" or "Sun-bonnet Babies."
 - c. Board work continued on nature topics and on stories of language period.
2. *Method.*
 - a. *Assign parts* as in *dialogue* wherever reading material is suitable. Use portions of "*Bow-wow* and *Mew-mew.*"
 - b. Review of certain favorite stories, chosen from books completed. To be read as *wholes* in most pleasing manner.
- II. **Phonetics.**
 1. *Material.*
 - a. All consonant sounds and long and short vowel sounds.
 - b. Teach th, wh, sh, fl.
 - c. New phonograms—as *ed, ing, oy, ow, ou.*
 2. *Method.*
 - a. Similar to last quarter.
 - b. Begin little phonetic booklets in which children keep lists of words with phonograms.
- III. **Word Study.**—Similar to last quarter. More rapid "flash" work—two words at a time. Use simple phonetic words.
- IV. **Seat Work.**—(See previous quarter).
 - a. Copy group of five or more simple sentences from board after black-board lesson.
 - b. Writing phonetic word lists with new elements.
 - c. Copy sentences from reader.

Class D.—Second Year.

First and second year children can not alternate reading, for each month presents new steps in the process.

FIRST QUARTER.—I. Reading.

1. *Materials.*

- a. Select *one-fourth* of the *adopted second reader* and *one-fourth* of a *supplementary reader*.
- b. Teacher read a story or poem occasionally from McMurry's "Stories for Little Ones."

2. *Method.*

- a. Open work in the fall with a number of blackboard lessons to *review* slightly, and to *lead up* to the new material.
- b. *Oral work, picture study and sentences* and *new words* recorded on board in development of each new lesson.
- c. Notice *structure of lesson. Title, paragraphs.* How tell where a new paragraph begins? (*Indentation*).
- d. Make *application* of their work in *phonics* in *attacking* words they cannot get from the setting.
- e. Work for *improved expression* by skillful questions.
- f. Let children spend ten or fifteen minutes preceding recitation studying a lesson in which the *difficulties* have been *worked out* in a *previous period*. Then they are prepared to read smoothly.
- g. Special attention to *pronunciation* and *enunciation*.

II. *Phonetics.*1. *Material.* a. Review work of last year.

- b. Simple *phonic rules* for long and short vowel sounds, mat-mate; hop-hope.
- c. Suffixes, *ing, ed, er, est.*
- d. *Building and blending* words, using their knowledge of phonetics.

2. *Method.*

- a. See previous suggestions.
- b. Keep booklet for word lists.
- c. *Special drills* on words for *pronunciation* and *enunciation*.
- d. Develop rules—show by examples that the children give, that words that end in "e" have a long vowel; m-ate.

III. *Word Study:*

- a. See last year's suggestions.
- b. Selected words for "flash" spelling.
- c. Teach dividing words into *syllables* in oral spelling. Note where to divide them at end of line when writing.

IV. *Seat Work:*

- a. Similar to previous year.
- b. Copy portions of lesson from book. (*Transcribe—print to script*).
- c. Teacher write questions about lesson on board. Children write answers.
- d. Children write independent sentences on some topic. Teacher place difficult words they wish on board first.
- e. Train children to look over written work to correct mistakes before handing in paper.

SECOND QUARTER.—I. Reading.

1. *Material.* 1. Select a *second fourth* of both books for reading.

2. Class also read from "Hiawatha Primer." A single copy may be passed for sight reading.

II. *Method.* Follow according to previous suggestions.

THIRD QUARTER.—I. *Reading.* 1. *Material.* a. *Select a third fourth of each book.*
b. Read from "The Tree Dwellers" or some other *supplementary book.*

II. *Phonetics.*—Continue work already begun in phonics, word study and seat work.

FOURTH QUARTER.—I. *Reading.* 1. *Material.* a. Complete the two second readers.
b. Read as a supplementary pleasure book—Heart of Oak, Book I, or Fables and Folk Stories (Scudder).

2. *Method.*

a. Assign parts for *dramatization and dialogue.*

b. When reading from supplementary book, let child come forward to read in his most pleasing manner to rest of class.

II. *Phonetics.*—See previous suggestions for *phonics, word study and seat work.* More *study* at seats now before coming to class.

NOTE.—The following books are suitable for work in Class D, and may be used whenever there is opportunity: Folk-lore Stories and Proverbs (Wiltse); Art Literature, Book II, Early Cave Men (Dopp); Lolami, the Cliff Dweller (Bayliss); Fables and Folk Stories (Scudder); Boy Blue and His Friends (Blaisdell); From September to June with Nature (Warren); Character Building Readers "Helpfulness" (Kenyon-Warren).

Class C.—Third and Fourth Years.

Read the suggestions given for the first two years to get the *spirit* and *aim* of primary reading. It is very essential that the interest developed in reading during these first years be kept active in these next years. It is too often true that third and fourth year children read with less fluency and less animation than in their second year. There are reasons for this, and teachers should make the conditions such that the reading work will be steadily progressive. The reading material of the reading books for third and fourth years is much more difficult than before, and unless the previous work has been carefully done, and unless ample provision is made for proper *study* of these lessons, the child will find thought obstructed by mechanical difficulties. This means that some very *definite purpose in close relation to the child's interests must be always present in his mind* and that the *assignment and method of study are of prime importance.*

Preparation should be made in these years for *the use* of the dictionary, but *do not waste time by depending on these children to use the dictionary to look up new and difficult words.* (See first quarter).

Encourage children to *express their appreciation of beautiful and strong parts* of selections.

Pupils will spend two years in reading the third reader and other books of that same grade. This makes it possible to *alternate* the work. The work assigned for the third year should be done by both grades in the year 1911-12, and the work for the fourth year should be done by both in 1912-13. The two third readers should be studied along together, and about *one-eighth selected* each quarter. At least one library book should be selected for special study during each quarter. This book may be read by the pupils individually and parts told to the class, by the teacher to the class or by pupils to the class.

Third Year—Third Reader—1911-12.

FIRST QUARTER.—I. Reading.

- I. *Material.*
 - a. First eighth of each of the third readers.
 - b. Eggleston's Stories of Great Americans for Little Americans. (History foundation).
 - c. Pinocchio—(imaginative elements).
2. *Method.*
 - A. *Study Lesson* (in class).
 - a. *Silent reading* under the teacher's guidance.
 - b. Questioning upon the story before any oral reading is done—to get at the principal facts of the whole lesson and of certain paragraphs. When a new selection is first taken up this *may* occupy a whole lesson period, at other times only a part.
 - c. Children should be trained to discover pronunciation of words by themselves.
 1. By their use of phonics and syllabication.
 2. By meaning or use in the sentence.
 - d. *Brief enunciation and pronunciation drills.*
 - e. *Definite assignment* for seat work to prepare for the period of *oral reading*. Children's *habits of study* are most important in these years.
 - B. *Oral Reading Lesson.*
 - a. *Motives* governing desire to read aloud.
 1. To give *information* from a book not in the hands of other pupils.
 2. To give *pleasure* to others and to self.
 3. To render a selection (story or poem) especially well for *special occasions* as morning exercises or Friday afternoon.
 - b. Good expression secured by apt *questions* that bring out the *meaning* of the context, and by *hearing the teacher* and other *good readers* read.
 - c. Aid child in matters of *pronunciation, voice, position* of standing and of holding book easily and in *forming a basis* for *selection of beautiful and strong* parts of selections.
- II. **Phonetics and Word Study.**—(Combine with *study period*, seat work and *spelling period*).
 1. *ai, ea, oa; ar, ah, alm, alf, awk.*
 2. *Drill* on words commonly mispronounced, *across, been, catch, chimney, burst.*
- III. **Seat Work.**—a. *Study* from definite assignment growing out of class study of new work.
 - b. *Silent reading* of supplementary books.
 - c. *Questions* on board as guide for *study* or for simple written work.
 - d. *Brief outline* of story in short sentences.
 - e. Take a short time to see that children know *alphabet in order*. Make little booklets for "*dictionaries*." Allow several pages for each letter that is likely to occur often as an initial letter of words. Two pages for words beginning with A; two for B; two for C; one for D, etc. Keep in these booklets the new and difficult words worked out in the class study period. Use simple *diacritical marks, accent mark* and a simple *meaning*, as given in class. Lists of these words should be on the board after a class study period so that the children may copy them at seat periods. (This work has *immediate value* and *prepares for later dictionary work*).

SECOND QUARTER.—I. Reading.

1. *Material.* a. A second selected eighth of the third readers.
 - b. Read Miss Cowles' *Robinson Crusoe*.
 - c. Stevenson's *Child's Garden of Verse*.
2. *Method.* a. See method for *silent* and *oral* work of first quarter.
 - b. It is good to *have at least* two copies of the supplementary book from the library, so that the teacher may follow closely while the other copy is being used in oral reading by the children.
 - c. Let the teacher read the difficult portions of supplementary books. This work should be pleasurable and move along smoothly.
 - d. Let the teacher read an entire poem from Stevenson's *Garden of Verse*, and then let members of the class read. As they become familiar with these poems, let different ones read whole poems of their choice to the class. Give opportunity for expression of their *appreciation and choice*.

II. **Phonetics and Word Drills.**—Continue work of first quarter. *alk, ast, ask, er, ere.*

III. **Seat Work.**—See first quarter.

THIRD QUARTER.—I. Reading.

1. *Material.* a. A third selected eighth of the third readers.
 - b. The Seven Little Sisters.
 2. *Method.* See previous quarters.
- II. **Word Study.**—Continue plan outlined. Effect of *prefixes* and *suffixes*—*un, dis, less, ful.*
- III. **Seat Work.**—Note *habits of work.*

FOURTH QUARTER.—I. Reading.

1. *Material.* a. A fourth selected eighth of the third readers.
 - b. *Birds and Their Nestlings* (Walker).
 - c. *Scudder's Book of Legends*
2. *Method.* (Much growth in power to read *intelligently* and *easily* from the third reader or simple library books should be noticeable.) Continue procedure of previous quarters.

Fourth Year—Third Reader—1912-13.

FIRST QUARTER.—I. Reading.

1. *Material.* a. Select an eighth from that portion of the third reader not completed.
 - b. *Aunt Martha's Corner Cupboard*.
 - c. *Songs of Treetop and Meadow*—McMurry (Selected poems).
 2. *Method.* a. Plan of procedure for this year similar to that outlined for *third year*, but be sure of a *definite line of progress*.
 - b. *Aunt Martha's Corner Cupboard* is of geographical import. If it can be used at the geography period to supplement the regular geography work, give more attention to *Songs of Treetop and Meadow* and to some other selections from "*Literature of Power*," such as *Field's poems*.
- II. **Phonetics and Word Mastery.**—a. See *third year work*. Review.
- b. More work with diacritical marks as needed. (Do not *recite* words with diacritical marks—but know how to pronounce words from markings).
- III. **Seat Work.**—Similar to that of third year.

SECOND QUARTER.—I. Reading.

1. *Material.* a. Selections from third readers.
- b. Stories of Pioneer Life (Bass).
- c. Story of Ulysses.
2. *Method.* a. Study the difficulties children have, such as *hesitating* and *slow movement* in reading. Work for clear imagery, give flash work with phrases and sentences and let them read *silently*, then tell *promptly* what they read.
- b. Are any difficulties due to *physical defects* of *speech, eye, hearing*? Seek to give right aid.

THIRD QUARTER.—I. Reading.

1. *Material.* a. Selections from third readers.
 - b. Wings and Stings. (Of nature significance).
 - c. The King and his Wonderful Castle. (Hygiene—The Castle is the body).
 2. *Method.* a. See previous suggestions.
- II. **Word Mastery.**—Take time occasionally to show *use of* dictionary. Make it a *class exercise* under *direction* of the teacher. Teach *right habits from first*.

FOURTH QUARTER.—I. Reading.

1. *Material.* a. Complete the third readers.
- b. Art Literature Reader (Bk. 3), or Heart of Oak, Book 3.
- c. Selected poems from Songs of Treetop and Meadow.
2. *Method.* a. Let each child select two or three of his *favorite stories* from the readers. Why are these your favorites?
- b. Basis of *appreciation*? (Content of story—*beautiful* and *effective* language). Let him point out such parts from stories and poems.
- c. Which *book* that we read this year did you enjoy most? Why?
- d. What other books did you read for yourself?

NOTE I.—The following books are suitable for Class C: Adventures of a Brownie (Mulock); How We Are Clothed (Chamberlain); How We Are Fed (Chamberlain); How We Are Sheltered (Chamberlain); How We Travel (Chamberlain); Fifty Famous Stories Retold (Baldwin); Book of Nature Myths (Holbrook); Six Nursery Classics (O'Shea); Swiss Family Robinson; Among Giants (Neber); Grasshopper Green's Garden (Schwartz).

NOTE II.—In addition to basic reader, each class should read three or four supplementary readers. These supplementary readers should be furnished by the school.

Class B.—Fifth and Sixth Years.

Beginning with the fifth year, much more attention should be given to *literature of power* in distinction to literature of information. The children should be encouraged to use the literature of an informational nature more and more in connection with their study of the content subjects of geography, history and nature, although provision will still be made for them in connection with reading. More attention should be given to developing power in the children to use books without help. They should be encouraged to own dictionaries of the *high school* or *academic* grade. A dictionary of this kind will be useful all through the common schools and high school. During the fifth and sixth years they should learn to use it *quickly* and *easily* for *pronunciation* and *meaning* of words. Teach them the value of *indexes* and *tables*, of *contents* in such reference books as they use, in any subject.

During this period *development of power of appreciation and enjoyment of literature* should be emphasized. "Use literature as you use all studies—only more powerfully because of its greater emotional appeal—to illuminate and enhance the worth and glory of life and living."

"Interest and delight should accompany all the work done in literature. It should be done with an air of *happy and dignified leisure*."

To be able to do these things, the *teacher* must be a lover and *student of literature*. Use every means at your disposal to build up a good *school library*, and through the work of your literature classes develop the "*library habit*."

The fourth reader is used for two years and the work of these years may be alternated, as was done in the previous two years.

Fifth Year—1911-12.

FIRST QUARTER.—I. *Material*. a. Selections—one-eighth of reader.

b. Pioneer stories of the Mississippi Valley.

The following difficulties present themselves throughout these two years: 1. Many new words; 2. Familiar words in unusual settings; 3. Many literary idioms, as "without doubt"; 4. Complicated sentences; 5. Peculiar customs and events not found in child's experience; 6. Situations and conduct that bewilder his ethical judgment.

2. *Method*. a. Whenever a selection is taken up that presents new and special difficulties a class preparation or study period is necessary.

b. The following procedure is suggestive for intensive study: *Lesson*—(1) from the reader—(2) a story from a collection of stories—or (3) a chapter of a complete classic.

1. *Read the story silently* at seats before coming to class.

2. Make a list of incidents that occur.

3. Make a list of words and phrases you will wish to look up.

4. *Conversation lesson* in class on the above points. *Questions* by the *teacher* and *children* to awaken further interest and study. *Questions* and *aid* to pave the way to easiest mastery of verbal difficulties of new and difficult words and of long and obscure passages.

5. *Definite assignment* of a particular portion (several pages or a chapter) for careful study.

6. *Oral reading* after a portion is cleared of difficulties. (For most selections from the reader a single reading is sufficient. Do not remain too long on a single selection). See motives for *oral reading* under third and fourth years.

7. Tell what afforded you most pleasure in the selection. What *incident* or which *expressions*? Memorize select parts.

c. Supplementary—Pioneer Stories (McMurry). *Read portions silently* and then *tell* to class. Select portions for *oral reading*. Teacher read parts to class.

SECOND QUARTER.—I. *Material*. a. Reader selections.

b. Story of Lincoln.

c. Autobiography of Benjamin Franklin.

2. *Method*. a. The suggestions previously given apply for every quarter. Vary whenever *variety will strengthen*.

b. Use *pictures* and *illustrative material* in connection with all work. *Imagery* of situations.

THIRD QUARTER.—I. *Material*. Beside reader selections use the following *imaginative* selections:

- a. Hawthorne's Wonder Book (selections),
- b. Alice in Wonderland.
- 2. *Method.* a. Work for clear *imagery* and enjoyment of the fancy. The child of these years enjoys this return to his mythical and fanciful friends. It will be invaluable to him in his *later study* of *imaginative literature* as well as affording *present enjoyment*.

- FOURTH QUARTER.—I. *Material.* a. Ruskin's King of the Golden River.
- b. Browning's Pied Piper.
 - 2. *Method.* a. Bring out the imagery and *symbolical elements* of this old fairy tale (King of the Golden River).
 - b. This is excellent material for *animated oral reading*.
- Memorize.**—The Beatitudes.

Sixth Year—1912-13.

FIRST QUARTER.—Beside completion of reader, one classic each quarter.

- 1. *Material.* Andrew's Ten Boys.
- 2. *Method.* Variety, Silent and oral. Good clear description of each boy, the customs of his period—(education—sports—life occupations).

SECOND QUARTER.—I. *Material.* King Arthur and his Knights.

- 2. *Method.* a. (See method first quarter of fifth year).
- b. Give a description of King Arthur—of his court.
- c. Describe the various knights, and tell of their deeds.
- d. Which is your favorite? Why?
- e. Memorize the *oath* and King Arthur's last words.

THIRD QUARTER.—I. *Material.* a. Snowbound. (Whittier).

- b. Norse Stories (Mabie).
- c. A Dog of Flanders (Ouida).
- 2. *Method.* a. Clear imagery of the scene about the fireplace, the farmhouse, and surroundings in snow, and the doctor on his rounds.
- b. Whittier's life and writings.
- c. Prepare several of the Norse Stories to *tell* to the class.

FOURTH QUARTER.—I. *Material.* a. Longfellow's Hiawatha.

- b. Burrough's Birds and Bees.
- 2. *Method.* a. Use Riverside Edition of The Dramatization of Hiawatha, from which to assign parts for outdoor dramatization (Houghton, Mifflin Co.). This will admit using the children from the primary up, and all have learned to love Hiawatha in earlier story forms. Costumes easily made of unbleached muslin decorated with crayola.
- b. *Birds and Bees.* A series of *essays*. How do these differ from collections of stories read before? What observations of *birds* has Mr. Burroughs made? Of *bees*? What comparisons does he make between *bees* and *people*? What do you know about Mr. Burroughs from reading these essays?

Quarterly examinations will be based upon the reading assigned for each quarter.

Memorize.—Tennyson's Flower in the Crannied Wall.

Suggested General Reading.—Black Beauty; Five Little Peppers; Five Little Strangers.

Class A. Seventh and Eighth Years.

Good *habits of study* should be well established at this time. Read suggestions for previous years. Much silent reading and some home reading will be necessary to accomplish *all* the reading that needs to be done this year. Always keep the *thought and appreciation* uppermost. Be able to select simple *figures of speech* and to show how they add to the effectiveness and beauty of the passage. See that the library affords good reference material, encyclopedia, mythology, etc.

Work for improvement in *oral reading*—in the matter of life, *smoothness* and *directness*. In working for life and animation choose selections of special interest to the reader, so that he is mentally alert and forgets himself; selections that appeal to one's sense of the beautiful, and in securing smooth reading. Directness in reading is secured by dialogue parts, and by dramatizing selections. (See motives for *oral reading* under fifth and sixth years.)

Encourage children to talk of books and magazines they are reading at home and elsewhere; let each one *review* some *book* of interest to him and select a portion of it to read to his class to arouse their interest in the book.

The work of these grades is to be alternated. Besides using the fifth reader, if one is adopted, read the classic or supplementary book each quarter.

Seventh Year—1911-12.

FIRST QUARTER.—I. *Material*. a. The Man Without a Country (Hale).

b. The Young Citizen (Dole).

2. *Method*. a. Both books inculcate ideas of citizenship.

b. Distinctions in types of literature—one "literature of power"—the other literature of information. What differences do you see and feel?

c. What *magazines* and *papers* are used in your school? (World's Work, Current Events). Select parts to be read and reported upon. Other parts to be read aloud.

d. Why do people take newspapers? What sort of information do we find in newspapers (present history, editorials, gossip, market quotations, etc.). What is important for us to read? Why?

SECOND QUARTER.—I. *Material*. Miles Standish.

2. *Method*. a. Look up references to Miles Standish in history.

b. Select the *words* and *phrases* that describe Miles Standish; Priscilla; John Alden.

c. What pictures and incidents stand out clearly in this story?

d. Make use of pictures of the time.

e. This is excellent material for dialogue reading and dramatization.

f. Select and memorize portions.

THIRD QUARTER.—I. *Material*. Longfellow's Evangeline.

2. *Method*. a. Read through to get the story.

b. Historical setting.

c. Study in portions (figures of speech). Note beautiful nature descriptions (the rivers, Indian summer). What do you learn of the life of the Acadian peasants? Would you have ended this story where Longfellow did? Discuss.

d. Oral reading of selected parts.

e. Select parts to memorize.

f. What do you know of Longfellow's life and writings?

FOURTH QUARTER.—I. *Material*. Stories of the Great Republic (Guerber).

2. *Method*. a. Read and report on some of the stories.

b. Select portions to read aloud.

c. Report on other books being read.

Memorize.—Wordsworth's Daffodils and the final paragraph of Webster's Reply to Hayne.

Suggested General Reading for Seventh Year.—Pilgrim's Progress, Crick-et on the Hearth, The Other Wise Man, Little Women, The Adventures of Tom Sawyer, Quentin Durward, Rab and His Friends, Julius Caesar, Plutarch's Lives, and Travels at Home.

Eighth Year—1912-13.

FIRST QUARTER.—1. *Material.* Thoreau—Succession of Forest Trees, or Taylor's Boys of Other Countries.

2. *Method.* a. See fifth and sixth years for study of lesson.
 - b. What are the most interesting ideas Thoreau brings forward? Why interesting?
 - c. What facts that he mentions have you observed among forest trees?
 - d. What do you know about Thoreau from reading this book?
 - e. Select the beautiful descriptions. What do you like about them?

SECOND QUARTER.—1. *Material.* Dickens' Christmas Carol.

2. *Method.* See method as outlined for previous work. Note types of ques-tions asked about other classics. Plan as to what you wish the children to get from this reading.

THIRD QUARTER.—1. *Material.* a. Ivanhoe (Scott).

- b. Legends of Sleepy Hollow (Irving).
 - c. Enoch Arden.
2. *Method.* a. What was the effect of the Norman Conquest on England? (first chapters).
 - b. Note the different classes of society in England at the time of Scott's story (Jew, Norman, Saxon, Templar, Palmer, Outlaw).
 - c. Get a clear picture of the tournament and of the siege of the castle.
 - d. Compare Rowena and Rebecca as to character.
 - e. Discuss the character of Robin Hood.
 - f. Which scenes would you select to dramatize?

FOURTH QUARTER.—1. *Material.* a. Around the World in the Sloop Spray (Slocum).

- b. Stories of Missouri (Musick).
 - c. Merchant of Venice.
2. *Method.* The first book gives world glimpses of geographical value; the second a most interesting collection of history stories for young Mis-sourians. Read and report on parts and select portions for oral read-ing. (Use maps and globe).

Memorize.—Byron's Stanzas on Waterloo and Lincoln's Gettysburg Speech.

Suggested General Reading for Eighth Grade.—Huckleberry Finn, Treas-ure Island, Kidnapped, The Spy, The Deerslayer, The Talisman, The Tale of Two Cities, Rader's History of Missouri, Hans Brinker, and Hero Tales from American History.

NOTE.—Class A should always be given literature. They should read many of our best easier classics.

SPELLING.

General Suggestions.

1. The oral word appeals to the ear—sound, *pronunciation*.
2. The written word appeals to the eye—form, *letters in proper order*.
3. Correct pronunciation is as important as correct spelling. A large majority of people talk (pronounce) much more than they write (spell). Do not neglect either pronunciation or spelling.
4. A word is a sign of an idea, a vehicle of thought. Put meaning, life into the lessons in spelling. Avoid the parrot-like meaningless, deadening recitations that bring the study of spelling into disrepute in many localities.
5. Do not waste time on words that pupils know and know well.
6. Use such methods as will lead pupils to form the habit of studying carefully all the new words as they come to them in their lessons. Use in the spelling lesson the difficult words of all the studies.
7. Spelling is a language study and should be made a part of the language work.

8. The number of words assigned for a spelling lesson should be small. Fifteen or twenty words make a good lesson for the upper grades, and a smaller number should be used for the lower grades.

9. Not over ten minutes should be used for a spelling drill and not over fifteen minutes for preparing a spelling lesson. The best results are secured by short periods of intense accurate work. Train in the "*Habit of exactness*." Long spelling lessons and long periods of study on spelling lead to bad habits of spelling that require years to eradicate.

10. The course in spelling is suggestive only and should be supplemented by the teacher.

11. Spelling matches are excellent incentives to secure proficiency in spelling and also in pronunciation. An hour spent this way occasionally on Friday afternoon is profitable. A friendly contest between two schools is often helpful.

12. In all oral spelling exercises, a pupil should be allowed but one trial.

In this Course of Study, *Spelling* is a somewhat general term, since it includes a number of phases of word-study. Some of these are *incidental* or *preparatory*, while others constitute a fundamental branch of school work.

The *incidental* relation of *spelling* or *word-study* to other branches is recognized in the fact that the vocabulary of each subject must be mastered before the pupil can make satisfactory progress in its subject-matter. In many text-books provision is made for the study of its special vocabulary. For example: in many school readers the *new* words are registered for drill, and a "*Pronouncing Index*" is a feature of all modern Geographies; likewise, text-books on Arithmetic and Grammar devote a considerable portion of their space to defining and explaining their vocabularies.

While all these devices for word-study indicate the importance of the subject, they do not include the formal drills that are characteristic features of a text-book in Spelling. As a fundamental branch of study, Spelling includes all the subjects specifically referred to under the terms Phonics, Orthography, Orthoepy, Word-Analysis, and Word-Building.

PHONICS is the branch of word-study which treats of the articulate sounds of human speech.

ORTHOGRAPHY is the branch of language-study which treats of letters and the art of writing words correctly.

ORTHOEPEY is the branch of language-study which treats of the correct pronunciation of words.

WORD-ANALYSIS and WORD-BUILDING involve the analytic and synthetic treatment of words in their relation to *root* and *prefix* or *suffix*.

All these phases of word-study are included under "Spelling" in this outline course. Since the ability to recognize words as they appear on the printed page, as well as to use them intelligently in speech and writing, lies at the foundation of the pupil's success in all branches of study, it is important that some phase of spelling work should be made the subject of frequent drill exercises throughout the common school grades.

The basis of this drill in class D is found in the vocabulary of Primers or Primary Readers, and in the words used in the nature study and language exercises. Likewise in class C, the words for drill should be taken from the vocabulary of the child's conversation, and from the vocabulary of his school studies. In the four upper grades many of the drill exercises in spelling should be composed of words used in the other studies of the pupil.

Class D.—First Year.

I. EXERCISES IN PHONICS.

The *phonic* exercises for the first year should include: (a) Training the vocal organs of the pupil by requiring the distinct utterance of all words used in reading; (b) training the ear to recognize and the vocal organs to produce the sounds represented by letters. In exercise (b) the teacher will group words because of their containing similar letters and sounds, and by this means the pupil is taught the relation between printed symbols and phonic elements.

On account of the general uniformity of the sounds, it is desirable to begin the study of phonics with the *consonants*.

The following exercises are typical of those which the teacher should present on the blackboard, or by the use of cards:

The sound of *m* as in me, man, men, am, ham, etc.

The sound of *n* as in no, not, can, van, ran, an, etc.

The sound of *f* as in fan, fun, fat, flat, flag, fly, etc.

The sound of *b* as in boy, bed, big, bell, bib, rib, rob, etc.

The sound of *t* as in ten, tin, top, hat, at, pat, sat, etc.

In like manner the other consonants and their sounds should be developed, and by the end of the first year the pupil should be familiar with all the consonant sounds. See "phonetics" under reading, second, third and fourth quarters of the first year.

In the first grade, the *long* and *short* vowels may be developed as follows:

The sound of *ē* as in me, be, he, we, see, she, etc.

The sound of *ē* as in men, ten, hen, fed, red, sled, etc.

The sound of *ō* as in no, go, so, old, cold, roll, etc.

The sound of *ō* as in not, hot, hop, top, pop, dog, etc.

And thus the more common vowel sounds may be drilled on and related to their symbols during the first year in school. See reading, first year.

II. EXERCISES IN SPELLING.

In addition to the phonic exercises suggested above, the exercises in spelling for the first year in school should include:

(a) Copying *words* on blackboard or paper.

(b) Copying short sentences from reading lesson or from blackboard.

(c) Oral spelling of the easier words used in the drill work in reading.

Class D.—Second Year.

I. EXERCISES IN PHONICS.

(a) The analytic exercises suggested for first-year drill should be continued

throughout the second year. During this year the pupil should become master of each of the *consonant* sounds and its symbol. Likewise, the pupil should be taught to give the more common vowel sounds and to associate each with its symbol.

(b) Synthetic exercises, involving phonic blending and word-building, should receive attention during this year. For example, the teacher may write on the blackboard some simple word or combination of letters and then encourage pupils to prefix or suffix other letters to form words; thus—

a—mat, bat, hat, pat, fat, flat, sat, slat, etc.

an—fan, pan, man, ran, and, hand, band, sand, etc.

old—bold, cold, fold, gold, sold, mold, told, etc.

ight—fight, light, right, bright, sight, night, might.

ar—far, farm, bar, barn, arm, harm, ark, dark, park, spark.

in—pin, fin, tin, tint, chin, inch, ink, think, sink, rink, drink, wink, etc.

These synthetic exercises can be made interesting to the pupil. Through them he becomes familiar with the rhythm of spoken words, and his eye, ear and vocal organs receive helpful training.

II. EXERCISES IN SPELLING:

(a) Copying *words* on blackboard or paper.

(b) Copying short sentences.

(c) Oral spelling of words used in drill work in reading.

(d) Writing words from dictation on slate, paper or blackboard.

(e) Writing easy sentences from dictation.

The formal work in spelling should be based on the vocabulary of the pupil's drill reader. The aim of the teacher should be to make each pupil master of both the spoken and written forms of the more common words. Drill in oral spelling. In class D, the word study, phonetics, and spelling should be at a separate period from the reading and story telling, but the things learned in the former exercises should be applied in the latter.

Class C.—Third Year.

The work for the third grade should include the following special lines of drill, viz.:

1. *Thorough drill on each elementary sound and the symbol that represents it* (phonics). Its object is to render the pupil *self-helpful* in learning new words as they may appear from time to time in his various text-books. Through these systematic drills the pupil becomes familiar with the phonic elements of the English language and is enabled to associate each with its symbol.

2. *Drill on Syllabication and Accent*.—These are elements of correct pronunciation, and therefore important. In oral spelling, the close of each syllable should be indicated by a brief pause. Or, teachers may occasionally require pupils to follow the old-fashioned custom of pronouncing each syllable in oral spelling, thus directing special attention to its phonic value.

3. *Pronouncing Exercises* (Orthoepy).—Distinct articulation and correct pronunciation should be insisted on in all word-study exercises.

4. *Drill on Words Topically Arranged*.—This method of grouping awakens interest and assists materially in teaching the *meaning* of words. The basis for these exercises will be found in such groups of words as are suggested by the following topics: Objects in Schoolroom, Parts of Schoolhouse, Parts of Human Body, Forest Trees, Fruit Trees, Relatives, Kitchen Utensils, Farm Tools, Names of Boys, Names of Girls, Insects, Diseases, Building Materials, Carpenters' Tools, Articles of Clothing, etc.

5. *Drill on Words of Opposite Meaning* (antonyms).—In the class drill,

the teacher will dictate a word and then require the pupil to spell it, and also its opposite. Thus the teacher may dictate *more, most, weak, sweet, etc.*, and pupils are required to write these words and their opposites.

6. Teach the easier diacritical markings. See course in reading for third year.

NOTE.—Spelling is essentially a *memory study*, and should be emphasized in the third and subsequent grades. Spelling and language should be closely combined in the third and following grades.

Class C.—Fourth Year.

1. *A continuation of the Drills in Phonics.*—These should involve the study of vowel and consonant equivalents.

2. *Drills on Antonyms and Synonyms.*—In the drill on both classes of words, the teacher should dictate a word and require pupils to spell it orally or write it, as well as its antonym or synonym. Occasionally pupils should be required to bring to the class carefully written sentences to illustrate the use of synonyms.

3. *The Study of Homophones.*—These troublesome little words require special drill, in order that the pupils may become masters of them. Throughout the *fourth, fifth and sixth* grades the drill on homophones should be confined to presenting them in their proper relations in *sentences*. Teachers should illustrate the use of *to, too, two, there, their, sail, pail, etc.*, in sentences.

4. *Topical Lists.*—These lists include the vocabulary of the street, of the store, of nature study, and of elementary geography and arithmetic. This method of selection and arrangement guarantees a practical vocabulary, and one which is related to the pupil's needs at this stage of his advancement.

5. *Drill on the Grammatical Forms of Words.*—The singular and plural of nouns, and the several forms of adjectives and verbs should receive attention.

6. *The Rules for Spelling.*—There are *three Rules for Spelling Derivatives* of wide and general application. Every pupil should be able to apply these rules, viz.:

(1) For dropping final *e*.

(2) For doubling the final consonant of a root word.

(3) For changing final *y* to *i*.

7. *Frequent Review of Words Misspelled by Pupils.*—The lists made by the pupils as suggested above will provide the materials for these reviews.

Class B.—Fifth and Sixth Years.

FIFTH YEAR.—The work of these grades should be extended along the lines previously suggested, and the following additional subjects should receive attention this year:

1. *Word-Building with Prefixes and Suffixes.*—This phase of word-study illustrates what an important part *mis-, dis-, un-, -ful, -less, -er, and -or, etc.*, play in the formation of derivatives. The study of the significance of these syllables when applied to root-words provides the pupil with a key to the meaning of many derivative words.

2. *Word Analysis Involving Prefixes and Suffixes.*—This phase of word-study develops the habit of looking intently at words—a habit which is a characteristic of good spellers—and one which affords the learner a better basis for getting the meaning of many derivatives than a dictionary definition.

3. *The Study of "Related Words."*—These exercises are designed to familiarize pupils with the several derivative word-forms in which the same root appears. For typical example, the verb *elect*, the adjective *elective*, and the noun *election*, are but variations of the same root-word.

4. *Diacritical Marks.*—These arbitrary symbols, such as the *macron, breve,*

circumflex, tilde, cedilla, etc., should be made the subjects of study. These marks deserve attention, because they appear on the pages of dictionaries and text-books that are designed to indicate the correct pronunciation of words. Each pupil should become so familiar with each of these diacritical marks and their significance when applied to various letters, that he can readily interpret their use, and thus become independent of the teacher in learning new words.

SIXTH YEAR.—The work for the sixth grade should include an extension of the several lines of drill provided for in previous grades, with special attention to these subjects:

1. *The Rules for Spelling Plurals.* Review all rules of spelling previously studied.

2. *The Rules for Spelling Derivatives.*—These helpful Rules should be reviewed and further illustrated. Teachers should require pupils to become familiar with these Rules and encourage their application.

3. *Word-Building and Word-Analysis, Involving the Common Prefixes and Suffixes.*—These are but an extension of the same lines of drill that were suggested for the fifth grade.

4. *Special Exercises in Pronunciation (orthoepy).*—Teachers should prepare special exercises on words likely to be mispronounced and drill pupils thoroughly on the same. It is conceded by all that correct pronunciation is one of the marks of an intelligent person. The formal drill of the schoolroom is required to correct the common errors which many pupils acquired with their vernacular. No teacher can afford to be in any degree careless in so important a matter, and if really interested for herself, it will not be difficult to do something toward interesting her pupils.

NOTE I.—Every school should have three or four copies of Webster's Academic Dictionary and the pupils of class B should be trained to use these books intelligently.

NOTE II.—Pupils should keep a list of all words misspelled or mispronounced and these should be drilled on repeatedly.

NOTE III.—In the four upper grades it is well to use some text in spelling for a formal lesson once or twice a week. But this text should not be followed page by page in a mechanical manner, but wise choice of appropriate, interesting work should be made.

Class A.—Seventh and Eighth Years.

SEVENTH YEAR.—I. *Attention to Words Used in Various Text-Books.*—The vocabulary of different text-books used in this grade should contribute a large percentage of the words presented in the exercises of the speller. The reader, grammar, geography, arithmetic, and physiology should each contribute a number of words, and in this way the speller is directly related to all other text-books.

In the word-columns of the speller used in this grade, many syllables may be left without any diacritical markings whatever, but all syllables should be indicated.

At this point the pupil is supposed to be so familiar with the *phonic* and *literal* analogies, that he can pronounce most *syllables* without the aid of diacritics. A knowledge of syllabication, however, is most important, since it is constantly required in all kinds of written composition.

2. *The Study of Homophones in Columns.*—For the first time in the pupil's text-book these troublesome words may appear in columns, each with its definition. One general direction should apply to this class of exercises, viz.: *the pupil is required to use the homophones in original sentences*, either oral or written. The

teacher should insist that all these illustrative sentences shall be in correct grammatical form and the product of the pupil's best effort.

3. *The Origin of Words*.—It is a matter of interest to trace English words to the country and language from whence they came.

4. *Synonyms from Different Languages*.—No other language is so rich in synonyms as the English. This class of words requires careful study, in order that the pupil may discriminate their several shades of meaning. The study of synonyms from the standpoint of etymology will enable the pupil to appreciate the force and vigor of words.

5. *Defining Words by Phrases*.—Some words of Latin origin may be most satisfactorily defined by using a phrase of Anglo-Saxon origin. For example: The Latin word *magnify* may be defined by the Anglo-Saxon phrase *to make great*, and *fortify* by the phrase *to make strong*.

EIGHTH YEAR.—The exercises of the eighth grade include:

1. *Topical Lists*.—These should be based on the vocabulary of school literature, civil government, United States History, elementary science, and of commerce and business. It will be observed that these exercises, and others suggested below, anticipate the needs of the pupils who are to leave school at the end of this year's work, as well as of those who are to pursue more advanced studies.

2. *Special Study of Prefixes and Suffixes*.—The common prefixes should be studied in relation to root-words and the significance of the derivatives clearly indicated. In these exercises suffixes may be grouped so that those conveying the same general idea and forming the same part of speech are studied as a unit.

3. *Word-Analysis Involving Latin and Greek Roots*.—This study gives the pupil an intelligent idea of the meaning of many derivatives, and enables him to trace the same root in a group of words. For example: the study of the terms used in the Metric System cannot fail to give the pupil a good understanding of the composition, relation and meaning of these words. Make a list and study words having the root *fact*, *pel*, *cide*, *flex*, *tract*, etc.

4. *Special Drills in Pronunciation* (orthoepey).—These drills should include words that involve difficulties in both spelling and pronunciation. They may be grouped in such a manner as to direct special attention to the element of difficulty, whether it be one in syllabication, accentuation, or phonics.

5. Contrast new words with words already learned, as *vermillion* and *pavilion* with *million*; *benefited* with *fitted*; *deleble* with *indelible*, etc.

6. Train pupils to notice difficult words as *till*, *until*, *nickel*, *niece*, *separate*, etc.

7. Two or three spelling exercises a week in connection with the literature work will be best in the seventh and eighth grades.

Results. When the eight grades have been completed the pupil should be able to:

a. Spell orally or in writing with a good standing, a list of words selected from the ordinary written work of the school.

b. Spell correctly the words used in his regular examination manuscripts.

c. Pronounce correctly all the words used in ordinary conversation and reading.

d. Write dictation exercises in which are introduced the common things met with in ordinary writing, such as homonyms, abbreviations, contractions, possessives, etc., and to punctuate and capitalize such dictation exercises properly.

e. Use the dictionary to find any information that it contains.

LANGUAGE.

Language is the expression of thought. In order that the child may express himself freely *he must have something to say and must be eager to tell it*. His various interests inside and outside of school furnish the basis. This desire to tell something must be kept prominent in every phase of language work. Let all *formal or mechanical phases* come up as the *need* is felt for them.

Oral expression precedes written expression and should compose most of the work for the first two years.

Since *language* is so largely a *matter of imitation* only the best examples should be kept before the children constantly. The teacher's language, the form and accuracy of her written work, her correction of their errors and her manner of using children's literature are all important factors.

The language work of the first four years is outlined by seasons. Material selected from the *interests of the children at different seasons* is followed by *suggestions* for using them for language work.

FIRST YEAR.

FALL.—I. Oral Composition.

1. Conversation with the children about the various nature study interests—landscape changes; birds; trees; flowers; home pets; games, etc.

2. *Method*. Work for freedom and ease in talking. *Gradually* work for *complete sentences*.

II. **Story Telling**.—1. Simple stories *told* by the teacher. The following are suggested:

The Old Woman and Her Pig	{	Nursery Classic, O'Shea, p. 20.
		How to Tell Stories, Bryant, p. 43.
		Jingle Primer, p. 19.

The Three Bears	{	How to Tell Stories, Bryant, p. 37.
		Fold-lore Proverbs, Wiltse, p. 43.

The Little Red Hen	{	Nursery Classics, O'Shea.
		Stories to Tell Children, Bryant, p. 7.

Little Black Sambo (Stokes Publishing Co., N. Y.).

How the Chipmunk Got Its Stripes (Nature Myths, Cooke, p. 89).

Jack and the Beanstalk (Fairytale Stories and Fables, p. 60).

2. *Method*. Stories after being *told* by the teacher are reproduced orally by the children. A few large questions may be used that bring responses in the form of parts or the whole of the story. The children are influenced by the *ideals* of language as found in the stories. Dramatization of stories gives zest to the expression.

III. **Poems**.—1. Nursery Rhymes and others selected from Stevenson and other children's writers.

"Who has seen the wind?" "A Good Play." "Bed in Summer." "My Shadow"—All from Stevenson in *Child's Garden of Verse*.

Come Little Leaves—(Art Literature Reader, Bk. II, p. 68).

2. *Method*. Memorize one poem each month.

IV. **Written Composition**.—They have seen the teacher write their thoughts on the board. They are anxious to write their own. This is the motive for teaching writing.

1. **Writing**—

a. Teacher writes a short sentence from their conversation on the board.
(I see a bird).

- d. Pupils trace the teacher's movement in the air.
- c. Pupils write in large, rapid movement on the board or on large sheets of paper with large soft lead pencils.
- d. Pupils write whole sentence several times first. Then work with troublesome *word*, and finally with difficult *letters*.
2. Written work—
 - a. Learn to write their names, date, grade, name of school.
 - b. Write simple sentences from copies on the board.

WINTER.—I. **Oral Composition.**—See course in nature study for winter of first year for topics to talk about.

II. **Story Telling.**—Keep list on the board. Review favorites. Let children tell to new children as they enter. Be able to tell at least three or four new stories each month.

Moon Stories { Nature Myths, Cooke.
 { Nature Myths, Holbrook.

The Lion and the Mouse (Stories for Little Ones, McMurry).

The Gingerbread Man (Classic Stories to Tell Children, Bryant, p. 8).

Cinderella (Fairy Stories and Fables, 9-10).

The Three Pigs (Household Stories).

The Town Musicians (Classic Stories for Little Ones).

The Red Headed Woodpecker (Nature Myths, Cooke, p. 29).

Peter Rabbit (Warne).

King Solomon and the Bee (Nature Myths, Cooke, p. 16).

Language through Literature (Nature and Art, p. 207).

Eskimo Stories.

III. **Poems.**—Twinkle, Twinkle Little Star (Art. Lit. Primer.)

Marching Song (Stevenson in Child's Garden of Verse).

The Cow (Stevenson in Child's Garden of Verse).

Snow Flakes (Nature Reader I, Wilson, p. 97).

IV. **Written Composition:**

1. Continue writing practice.
2. Simple sentences taken from class conversation or class story—written on the board. Children copy. *Flash work* with *single sentence*. Children write.

V. **Formal Work.**—As needed for correct expression—oral and written.

- a. Correct and avoid use of aint, have got, had ought, done gone, etc.
- b. Use of *a* and *an* with nouns as they need to use them.
- c. Use of capital—Beginning of sentence and for proper names. Capital I.
- d. Use of period and question mark.
- e. One inch margin on paper.

SPRING.—I. **Oral Composition.**—See course on nature study for spring. Talks and stories about the birds, insects, animals, flowers, games, trips.

II. **Story Telling.**—I. Besides those selected in connection with nature topics, these are suggestive:

Chicken Little (Household Stories, Folk-lore and proverbs, p. 1).

Little Half Chick (Stories to Tell Children, Bryant, p. 33).

The Straw, the Coal and the Bean (Grimm's Fairy Tales).

How the Robin Got Its Red Breast (Nature Myths, Cooke, p. 24).

The Crow and the Pitcher.

How the Elephant Got Its Trunk (Just So Stories, Kipling).

The Wind and the Sun.

Little Red Riding Hood (Fairy Stories and Fables, p. 38).

Raggy Lug (Stories to Tell Children, Bryant, p. 130).

Parts of Hiawatha.

2. *Method.* See Fall suggestions.

III. **Poems.**—The Wind }
The Rain } Stevenson in Child's Garden of Verse.

A Tiny Seed (Kate L. Brown, Stepping Stones, III, p. 62).

The Lost Doll (Three Years with the Poets, Hazard).

America (one stanza).

Who Stole the Bird's Nest? (Jingle Primer, p. 81).

IV.—**Written Composition.**—Proceed as before. Let children write some sentences of their own composition. (No copy). Place difficult words on the board.

V. **Formal Work.**—Continue as before. Work for constant improvement in speech but do not check freedom. Prepare carefully for all written work.

Second Year.

Continue in the same spirit as in the first year. *Something to say and eager to tell it.* Much oral work in conversation lessons and in re-telling stories. Let *every written lesson* be preceded by an *oral one*. Continue natural reciting of poems by individuals and by groups.

FALL.—I. **Oral Composition.**

1. Conversation about topics of interest. (See Nature Study).

(a) Our Garden. (b) The Birds. What they can do. Why I like them.

(c) The Butterfly. (d) Our Pets—My dog—My cat. (e) Make simple riddles. Ex. 1. I am gray (or brown). 2. I live in trees.

3. I eat nuts. 4. I run and jump. 5. I have a bushy tail. What am I? (Squirrel). (f) Fall flowers—the daisies.

2. *Method.* Do not try to tell too much about a single topic—just enough to make two or three small paragraphs if so arranged.

II. **Story Telling.**—Golden Rod and Aster. (Nature Myths—Cooke, p. 13.)

The Ant and the Grasshopper.

The Fox and the Grapes }

The Farmer and the Lark } (Fables).

King Midas (Lang. through Lit. Nature and Art, p. 153).

Clytie (In Household Stories).

The Tree Dwellers (Dopp).

III. **Poems:**

The Sun's Travels.

Autumn Fires.

The Hayloft.

My Shadow.—All from (Stevenson in Child's Garden of Verse).

Parts of Hiawatha—"Hiawatha's Chickens."

IV.—**Written Composition.**—Careful attention to writing—large free movement. *Do not use pen and ink this year.* Special help with common errors. Copy short verse or rhyme from board. (See seat work for reading—in first and second years).

1. Work out a series of sentences on the board taken from the conversation work. Each child contributes and the best are written on the board. Begin arranging in two or three short paragraphs.

2. After conversation let children tell the words they wish placed on board for help—then let them write their stories individually either at the board or on paper. Teacher ready to guide.

V. **Formal Work.**—This is not done in a separate period, but either *prepares* for or grows out of the *oral and written composition class periods*.

- a. Capitals—Names of persons, places, days of week; first line of poetry; "O."
- b. Punctuation—Period and question mark at end of sentences; period in abbreviations they use; correct copying of comma and quotation marks from board work.
- c. Abbreviation—Mr., Mrs., St. (for street).
- d. Correct form of pronoun after *is* and *are*. It is *I*. It was *he*. (Use in games).
- e. Correct use of *teach* and *learn*; *can* and *may*.
- f. Correct forms of irregular verbs learned in games and conversation—
break, broke, broken.
come, came, come.
eat, ate, eaten.
throw, threw, thrown.
go, went, gone.
see, saw, seen.
teach, taught, taught.
do, did, done.

These points hold for the year's work on the form side.

WINTER.—I. **Oral Composition.**—Winter Nature Study topics—Winter sports; reproduction of stories.

II. Story Telling.—The Discontented Pine Tree.

(Classic Stories for Little Ones, McMurry.)

(How to Tell Stories, Bryant.)

Winter Bird Stories.

Why the Bear is Stumpy Tailed (Nature Myths, Holbrook).

How Fire Came to Men.

The Cave Men (Dopp).

III. **Poems.**—Christmas Poems (Songs of Tree Tops and Meadows).

The Land of Story Books (Stevenson in Child's Garden of Verse).

The Land of Counterpane.

IV. **Written Composition.**—Formal Work—See Fall Work.

SPRING.—I. Oral Composition.—Conversation about—

The Robin (1) Where and When Seen. (2) Describe colors, bill (3) What he does. (Three paragraphs).—Spring games—Spring flowers—What the Wind Can Do.

II. Story Telling.—The Ugly Duckling (Andersen's Fairy Tales).

Why the Woodpecker's Head is Red { Nature Myths, Cooke.
 } Nature Myths, Holbrook.

Sleeping Beauty.

The Dog and His Shadow.

Snow White and Rose Red (Fairy Tales, Grimm).

Why the Morning Glory Climbs (Bryant, p. 137).

III. Poems.

Windy Nights.

The Wind.

The Cow.

Where Go the Boats—All from (Stevenson in Child's Garden of Verse).

Talking in Their Sleep (Lang, through Lit. Nature and Art, p. 38).

IV-V.—Written Composition and Formal Work.

Select topics from the oral work. Several lessons may be given to Robinson Crusoe—Robinson Crusoe's House—His Garden—His Goats, etc.

Third Year.

Read over work for first two years.

FALL.—I. **Oral Composition** both for oral work as such and to precede written composition. For most of the work a full rich knowledge of the topic is gained in other classes—in nature study, geography, history, reading, and in experiences.

- a. Relating of personal experiences.
- b. Descriptions of games—How to Play Tree Tag; Marbles.
- c. Descriptions of objects from nature study, of people and customs in geography.
- d. Reproduction of stories; reciting of poems.

II. Stories to Tell.—Three reasons for telling stories:

- (1) For oral and written reproduction *in part* or as *whole*; (2) for *dramatization*; (3) for *simple enjoyment*.

The Country Mouse and the City Mouse (Stories to Tell Children, Bryant, p. 19).

Bell of Atri (Fifty Famous Stories, Baldwin, p. 69).

Ceres (Round the Year in Myth Song, p. 52).

The Boy and the Wolf (Fable) (Stories to Tell Children, Bryant, p. 68).

Billy Goats Gruff (Fairy Stories and Fables, p. 20).

Seven Little Sisters (Andrews).

Method. Prepare for written work in paragraphs by preparing a simple *outline of story* to be told. Do this with only a few stories.

III. Poems.—September—Language through Literature, Nature and Art, p. 20.

Selections from Hiawatha.

October (In Nature in Verse, p. 206).

How the Leaves Came Down (Language thro Literature, Nature and Art, p. 42).

IV. Written Composition:

- a. The topics developed in the oral composition. Emphasize the paragraph everywhere. Notice it in all books.
- b. Give as much attention to children as possible while they are writing. Place difficult words and simple outline on the board. Put *main emphasis* on *avoidance of error by preparing carefully before writing*.
- c. Occasionally work out a story on topic on the board, class contributing as in first two years.
- d. Give help in orderly arrangement of ideas, construction of sentences, choice of words and phrases and in correction of mechanical details.
- e. *Letter-writing.*
 1. Copy a model letter written by the teacher. (It should be a letter written *by* or *to* a child).
 2. Let teacher and children compose a letter written to an absent classmate.
 3. Write invitations to mothers and fathers to come to visit the school.
 4. Whenever letters and invitations are written by the children, let it be toward a *definite purpose*—"a *real letter*" to be sent.
 5. Emphasize correct form of *heading, salutation, signature, address*.
- f. *Picture Study.* Let the teacher study a few suitable pictures and then aid the children in this. Study the work as given in Language Through Literature, Nature and Art. Procure Perry Pictures.

Language Books. Do not be *dependent upon a language book in the hands of the children.* A good book for them to own for the *story work, poems and pictures* is "*Language through Literature, Nature and Art.*" Keep a set of six or more in the library or among supplementary books.

V. Formal Work.—I. *Review* by use all previous work with *capitals and punctuation.*

2. Apostrophe in possessive singular.
3. How to divide a word at end of line.
4. Contractions: I'll, you'll, isn't, don't, hasn't.
5. Correct form of abbreviations as needed.
6. Irregular verb forms as needed (see former list).
7. Correct use of: there is, there are, there was, there were, this and that, these and those. (*Spend no time teaching forms that the children are not going to use immediately, or those which they do not use incorrectly. Study the situation.*)
8. Teach use of polite forms: If you please, pardon me, I thank you, etc.
9. Discourage such forms as: done gone, I taken, where it is at, what went with it, busted, slung.
10. Form: title, paragraph, spacing, margin. Begin use of pen and ink.

NOTE.—One period a week is enough to give to the formal work. Do *very little written work without supervision and inspection.* If error is avoided it will not take time and energy for correction.

Suggested topics for Fall Work:

1. Hiawatha's Sport. What could Hiawatha do that was sport? (Hunt, fish, make a bow and arrow, make a canoe).
2. How Seeds are Scattered.
3. a. Letter *from* Hiawatha to us—describing his home—where? The Wigwam. Who lived with him?
b. Letters *to* Hiawatha—each describing his own home to Hiawatha.
4. Our trip for flowers, for seeds, etc.
5. Our Harvest Festival.

WINTER.—I. **Oral Composition.**—Read preceding suggestions.

II: **Stories to Tell:**

The First Christmas Tree (Van Dyke—Lang. through Lit. Nature and Art, p. 120).

The Gift Bearer (in same book).

The Golden Cobwebs (How to Tell Stories, p. 133).

Continue Stories of Seven Little Sisters.

III. **Poems.**—Wynken, Blynken and Nod. (Field.)

The Children's Hour (Longfellow).

America (all of it).

Home Sweet Home.

Talking in their Sleep.

IV. **Suggested Topics for Writing:**

1. How to Make a Snow-man.
2. How to Play Fox and Geese.
3. Tell how Louise made others happy at Christmas Time. (Seven Little Sisters).
4. Imagine you are the month of December. Tell what you bring. What you do. Whether people like you.

SPRING.—I. **Oral Composition.**—(See other subjects).

II. **Stories to Tell.**

1. Why the Sea is Salt. { How to Tell Stories, p. 216.
 } Nature Myths, Holbrook, p. 135.

2. Grace Darling (Fifty Famous Stories, p. 161).
3. The Golden Touch (Hawthorne).
4. Baucis and Philemon—tree story—(Nature Myths, Cooke, p. 71).
5. (Continue Stories of Seven Little Sisters, unless completed).
6. Selections from following books:
 Old Stories from the East (Baldwin).
 Docas (Snedden).
 Fifty Famous Stories.
 (See Library list in back of course.)

III. **Poems.**—1. A Laughing Chorus. (Language through Literature, Nature and Art).

2. The Spider and the Fly.
 3. Poems from Songs of Treetop and Meadow and from Nature in Verse.
- IV. **Suggested Topics for Written Work:**
1. Spring signs: the grass, the leaves, birds, warmer air, etc.
 2. The Meadow Lark.
 3. The Earthworm. Where does it live? What use is it?
 4. A Bird's Nest—Tell about one you have seen—where built? By what kind of bird? Material used?
 5. Reproduction of selected story.
 6. Which of the Seven Little Sisters would you like to visit? Why? (Give several reasons).

Fourth Year.

FALL. Read all previous suggestions.

I. **Oral Composition** to precede new phases of written work. Continue telling of stories in connection with reading and language work. Use brief outlines in geography and other classes to aid in organization of ideas. Use good language in every class.

- II. **Stories to Tell.**—1. The Three Golden Apples (Hawthorne.)
2. Persephone—Nature Myths (Cooke, p. 48).
 3. Horatius at the Bridge (Fifty Famous Stories, pp. 5-8).
 4. Death of Baldur (Norse Stories, Mabie, p. 197).

- III. **Poems.**—1. Corn Song (Whittier).
2. The Landing of the Pilgrims (Hemans).
 3. The Sand Piper (Thaxter).

(Both in Language through Lit. Nature and Art.)

IV.—**Written Composition.**—Suggested topics for written work.

1. Domestic Animals—Those we keep—why we keep them—some kept in other lands.
2. Migration of our birds—which ones go? Why do they go? Where do they go?
3. Tell about one of your excursions—how you went—where—what you gained—what you enjoyed most.
4. (a) Write a letter from a farmer to a city man, telling the advantages of country life. (b) Write the city man's reply.
5. Write the history of a loaf of bread.
6. Stories—(Poems from memory).

Written Work. See previous suggestions. More independent work, but prepare carefully. Have no written work done in any class unless it is worth doing well. *Use pen and ink for all compositions.*

V. **Formal Work.**—See third year *abbreviations*: A. M., P. M., M., Rev., P. O., U. S., Co., R. R., No., sq. ft., yd., bbl., am't., and others as needed.

Contractions. Explain how formed. Correct use of *doesn't, don't, I'm, it's.*

Punctuation. Take out readers and story books and notice the use of various kinds of punctuation marks.

Dictation lessons of prose and poetry—selections for punctuation (study first). Write a poem from memory—punctuate properly.

Correct use of relative pronouns—who—whom—which—that. May and can, shall and will; personal pronouns I and me; we and us; *teach* and *learn*; discourage bad language forms, such as, It is to home. Formation of plurals of nouns—*s* or *es*; *f* to *v* and add *es*; *y* to *i* and add *es*; give dictation to teach these forms. *Good form* in all work—*accept no careless work. Commend all improvement.*

WINTER.—I. **Oral Composition.**—Preparatory for written work and in all oral recitations in other subjects.

II. Stories to Tell.

1. The Golden Fleece (Hawthorne).
2. William Tell—(Fifty Famous Stories, p. 64).
3. Aladdin and His Wonderful Lamp.
4. Sir Walter Raleigh—(Fifty Famous Stories, p. 54).
5. Uncle Remus Stories—(Harris).

III. Poems.

The Frost Spirit.	} Lang. through Lit. Nat. and Art.
The Village Blacksmith.	
The Story of the Wood.	

IV. Suggested Topics for Written Work:

1. Raising chickens—kinds I am raising—how I care for them—how it pays.
2. The Lesson Black Beauty Learned.
3. The Village Blacksmith—appearance of the man—the inside of his shop—the kind of work he does—why is it interesting to watch him?
4. Describe homes of people of different lands—How we are sheltered.
5. One of the Adventures of Ulysses.
6. The Best Story I have read this Year. Why I think so.
7. Uses of Trees—(Work out in nature study period).

V.—VI. **Written Work—formal work.**—See first quarter.

SPRING.—I. Oral Composition.

- ### II. Stories to Tell.
1. How Thor came by his Hammer (Norse Stories, p. 127).
 2. Robert Bruce and the Spider (Fifty Famous Stories, p. 53).
 3. King Arthur's Sword (How to Tell Stories, Bryant, p. 205).
 4. Selections from Collections in library.

III. Poems.—Selected poems from Songs of Treetop and Meadow; Nature in Verse; Around the Year in Myth and Song; Language through Literature, Nature and Art; and from the readers in use.

IV. Suggested Topics for Written Work:

1. How We Made Our Garden.
2. Write a letter from a robin to a blue jay (study each and think what they might have to say to each other).
3. The Woods in Spring.
4. The Story of a Raindrop.
5. Selected topic from story work.

NOTE.—Get acquainted with your school library and with ways of building it up. See that it contains the books called for in reading and language work.

Own at least two good language books for reference. Make use of the stories and poems found in the children's readers. Make (for your own use) a list of the various places to find the poems and stories you wish to use each season. Collect at least *one* good piece of written work each month from each child. *Examination*

should *not* be on *rules and forms*, but on *what the child can do* in oral and written composition.

Reference Books for Language Teachers.

1. Carpenter, Baker & Scott—Teaching of English.
2. Chubb—Teaching of English.
3. Bryant—How to Tell Stories to Children.

Class B.—Fifth and Sixth Years.

In the former grades the basis of the work has been supplied by the teacher. Now a text-book is to be used. If a two-book series is in use the first book will be suitable for fifth and sixth grades, if a three-book series, book two will be used. The teacher should not forget that the work of these two grades is to be alternated. This can easily be accomplished, though naturally the teacher, with the assistance of the County Superintendent, must select and arrange portions of the adopted text in accordance with the following outlines.

As will be observed, the fifth grade is to study particularly the sentence and the sixth grade the word. It matters little which subject is studied first. English scholars are not agreed as to which should have priority, the word or the sentence.

1. The first two weeks of any school term may well be used in reviewing the work of the previous grade.

2. Language exercises should take the form of oral and written compositions, stressing both. Use letter writing, the study of poems and suitable prose, dictation, memory gems, picture study, and the use of the dictionary. Continue the work as outlined in the lower grades, using the adopted book as a guide and for suggestion. Some days the book can be used and followed closely, and at other times outside or supplementary work can be given with profit. It is not best to follow a book very slavishly at any time or to use it every day, with no variety but in its lessons. Every lesson, however, should have something of language or grammar to be accomplished, even though it may not stand out prominently.

At least one written lesson per week should be required, and this should be largely of a constructive nature, viz.: notes, invitations, letters, accounts, narrations, descriptions, etc.

3. It is well to have written work preceded by oral discussions so that the class can get into the subject and have something to write. The teacher should always bear in mind that the child can learn to write only by writing of what he knows and that his only sources of material are what he has heard, what he has observed, what he has read and, perhaps, in a still deeper sense, what he has experienced.

4. For compositions that allow free play to the child's imagination and thought (and these should be frequent) subjects should be announced at least one day before they are to be handed in. They should be checked only and returned to the children for correction during the recitation period. This helps every member of the class and requires the children who have made errors to think them out.

5. Extemporaneous exercises at either board or seats should be given at least once or twice a week. The habit of care will thus be formed as well as readiness of expression and quickness in detecting error.

The following subjects for composition will be suggestive of the kind of themes suitable for children of these grades:

- A trip I took last vacation.
- How to plant a garden.
- One day in a city.

The autobiography of a kitten.
 A half hour at a window.
 How to play baseball.
 A day's hunting.
 A day's fishing.
 Birds of our district.
 Threshing wheat.

To this list might be added a hundred others that have come within the child's experience or observation and any others which his reading or studies may suggest.

Fifth Year—1911-12.

FIRST QUARTER.—Develop clearly the idea of sentence structure. The kind of sentences as to manner of expression should be watched, with the punctuation and capitalization proper in each. The simple sentence should be most used. Pupils should be encouraged in short, pointed, precise statement. The "and" habit and talking or writing in the "run-on" style are to be discouraged. But these pupils are able to distinguish sentences according to form and to learn their names.

SECOND QUARTER.—Use much practice in reproduction, both oral and written. Learn how to tell the short story and how to describe effectively. Also, study the art of explaining what a thing is and give some attention to definition. Teach children to give their reasons for beliefs, feelings and actions. Books and daily life will furnish material for these.

THIRD QUARTER.—Drill considerably on letter writing. Letters, notes and written communications may now be longer and more for their own sake than in the lower grades. Forms should be correct, even to matters of punctuation, capitals, folding, etc. Here we may also use conversations, quotations, reproductions, memory work on prose and poetry. Pictures may furnish a basis for special emphasis. Excellent suggestions are found in nearly all language books.

FOURTH QUARTER.—Review near the close of the year. Recall and fix in mind all rules and suggestions, definitions, forms and processes already used. Also, during the last quarter some sentence analysis may be profitable. Subject, predicate, word modifiers and phrases, connectives, simple and compound subject, predicate, and object will be within the child's understanding. Simple copulatives can be distinguished from transitives. Words that are likely to be confused may be given some attention, as *their* and *there*, *love* and *like*, *teach* and *learn*, *is* and *are*, *did* and *done*, *saw* and *seen*, *to* and *too*, *right* and *write*, *between* and *among*. Use of incorrect forms and words should be regularly discouraged.

At the end of the fifth year the pupils should feel free in telling orally or in writing almost anything of personal interest or knowledge. Also, he should be able to recognize the parts of speech. It is not essential that exact rules and definitions be learned. These may come a year or two later.

Sixth Year—1912-13.

Remember the plan of alternating with the fifth year. If this year follows the fifth, the work as outlined may be supplemented and enriched. If it precedes the fifth it may be somewhat simplified. In general the exercises of the course given later should be a little longer and stronger, and greater accuracy or precision should be secured. Bear in mind that the child does not remember all that he has formerly learned, and that many things are not well learned in previous years. So repeat, review, re-do much.

FIRST QUARTER.—Nouns are to be studied as such, with their simpler classifications. Singular and plural are distinguished; gender forms are learned; the pos-

sessive form receives more attention than heretofore. Uses of nouns in sentences may be noticed particularly. Pronouns should be studied soon after nouns. Their general use and classes are to be learned here, and incorrect forms in speech and writing are to be especially noted. Sentence analysis should also be stressed somewhat now. From simpler elements we can pass to larger and more complex ones. Phrases need to be clearly understood. Compound and complex sentences can now be distinguished from simple sentences.

SECOND QUARTER.—The adjective and adverb may now be studied as modifiers, and *adjective* and *adverb* may be applied to phrases and clauses. The verb is to be re-studied in this connection. Also, prepositions and conjunctions are becoming necessary in the study of phrases and compound and complex sentences. In short, the quarter may well be given to verbs, adjectives, adverbs, prepositions, and conjunctions, in their simpler forms and uses. Classifications may be learned as far as necessary.

THIRD QUARTER.—Cases of nouns and pronouns are now to be taught. Nominative, objective and possessive are to be made clear, and definitions are to be formed. Especial attention is to be called to the forms of pronouns in different cases, and errors in the use of the nominative and the objective are to be corrected by frequent drill exercises.

FOURTH QUARTER.—Review the work of the year and the entire book, if time and the ability of the pupils will permit. Stress especially those parts that have seemed difficult or that have been too hurriedly passed over. Analyze sentences frequently, and practice much in their construction in correct form. Prescribed forms and types can be called for and written. See that the pupil has strength and breadth enough to enable him to do the heavier requirements of next year. Have practice in letter writing, in memorizing of prose and poetry, in dictation and reproduction exercises.

In this year as in the fifth, the purpose is to make the child ready and correct in the use of language, in speaking and writing. Hard technical grammar would better be left for the seventh and eighth years.

GRAMMAR.

General Notes and Suggestions.

Bear in mind that the understanding and the use of language as a vehicle of thought are the purposes of grammatical study.

Emphasize the fact that *use* or *function* is the test in grammar. A word can be classed as some part of speech only when seen in its relation to others. So of all classification. Nothing is determined by itself.

Persistent practice and drill will do much. Repetitions and reviews help much to clear ideas and good memory. Never drop a thing once learned.

Get pupils to realize that grammar must be *studied*, not merely read and dropped without thought or application. Insist upon a hour per lesson outside of class. See daily study program. Assign work in such way as to be able to determine that they are working. Give frequent assignments to be worked up outside and brought in on paper, or put upon the board in the class.

Elementary principles may not be well remembered by seventh and eighth grade pupils, or they may never have learned them well; so recall frequently matters of the lower grades.

In these grades no loose, careless or slipshod work in definition, analysis or construction can be allowed. Demand careful discrimination and precise statement. See that words mean something.

Much illustration of rules and definitions is necessary for fixing things in the mind. In general, this should be original rather than from the book.

Habits of correct speech and correctness in writing are to be fostered. Slovenliness in form or use, or in the mechanics of expression, will ruin grammar.

Talking about things or reading about them is not so good as their real possession in practical application. To say that a word, sentence, punctuation, or construction ought to be so and so is very well; but to make it so or do it so is much better.

Written work of various kinds is very helpful; in fact, it is a necessity. The following are some ways of handling this feature:

1. Papers prepared outside of class and handed in; 2. Papers written in class and handed in; 3. Written exercises in class and the papers read or corrected then and there by the teacher, the writer, or a classmate; 4. Board work from previous assignment and preparation; 5. Board exercises without previous notice. All these are to be looked over carefully and the good features pointed out, as well as errors corrected. Written exercises are not to be merely time killers or to keep pupils busy or out of mischief. They are educative.

Real composition should be required at least once per week. This may be on something of class interest, it may come from other studies, or it may arise from daily experiences of pupils. Reproductions, stories, descriptions, arguments, and reviews of selections in prose and poetry will be useful. Mix these exercises and other written work with oral recitations so that none will become tiresome.

A variety of methods in conducting the recitation is desirable. The teacher who "hears the lesson" the same way four or five days in the week is a poor one.

Various devices for interest and to break monotony may be resorted to. Games with definite points, special assignments for testing knowledge, supplementary exercises upon newspaper clippings, making and correcting lists of errors heard in speech, and other devices are good occasionally.

Letters should be written often enough to secure ease in correspondence. Social and business forms are to be mastered.

Some reading and discussion of short poems and prose selections will be profitable. Oral and written exercises can be based upon them.

In the seventh and eighth years, the grammar text is used. It should be so distributed as to have a definite part each quarter of the two years. Each part passed over should be reviewed somewhat in each succeeding quarter. This book is to be completed in the eighth grade.

It is not advisable to follow closely the text in the order in which the matter is given. Pick out what is wanted at any time, regardless of its place in the book. Study the subject rather than the special book.

If possible, have a half dozen different grammars in the classroom. The board ought to furnish these. If not obtainable otherwise, the teacher can bring a few other texts, which she usually has for her own use. Have pupils compare the treatment of any point by two or three authors. Lack of other books for reference seriously cripples the best efforts of teacher and pupil.

Class A.—Seventh Year.

A Study of the Sentence.

FIRST QUARTER.—*The simple sentence*: 1. The Subject; 2. The Predicate; 3. The Bare Subject; 4. The Verb; 5. The Complementary Part; 6. The Modifiers; 7. Independent Elements. These points should be developed carefully by referring constantly to experience gained by the pupil in language work. The aim of seventh grade study in grammar should be to drill into the pupil's mind such a clear-cut notion of what the skeleton of a sentence is, as will serve him through all his sub-

sequent study of the subject. The exercise of picking out the essential elements of more complicated simple sentences can be made a kind of game in which the pupil takes considerable delight, before he enters upon any technical study of classes of nouns or verbs, or kinds of modifiers.

In the course of this study the verb-phrase should be given especial attention, the pupil being made to see that *did walk*, in an interrogative sentence does the same work as *walked* in a declarative sentence. Sentences containing verb-phrases of two, three, and four words should be provided and the pupils should be drilled to see what verb gives the meaning to the phrase, and what the auxiliary verbs are—without any technical study of the part played by each auxiliary in expressing the notion which the verb conveys. Much more time and care should be taken for this development than any of the grammars used in the State provide for.

Next after the study of the predicate verb should come the explanation about the complementary parts, beginning with the study of the predicate noun (*complement* is a poor name, because it is too generally used for any completing part) and the direct object. Many sentences should be examined and the skeleton picked out. Incidentally the transitive verb, the intransitive verb, and the copulative verb should be distinguished. The pupil should be made to *feel* the difference between the direct object and the predicate noun.

SECOND QUARTER.—Other completing parts should be taken until the students see clearly that the predicate of a sentence may consist of:

1. A verb or verb-phrase; 2. A verb or verb-phrase plus a predicate noun or predicate adjective; 3. A verb or verb-phrase plus direct object; 4. A verb or verb-phrase plus an indirect object plus a direct object; 5. A verb or verb-phrase plus a direct object plus an objective complement.

The teacher is now ready to develop modifiers: The adjective, the adverb, the phrase, the adjective phrase, the adverb phrase, the possessive modifier and the appositive. The phrase needs skillful treatment. The notion of the preposition as a relation word should be developed thoroughly. Infinitive and participial phrases should be touched upon only in tentative and elementary way here.

THIRD QUARTER.—Independent elements, the interjection, and the vocative, may be explained anywhere in the course of this study. The nominative absolute should be left until the eighth year. Through the seventh year the teacher should be ready to answer questions of bright pupils about these harder points, such as the retained object, the compound relative pronoun, the objective case as subject of the infinitive; but his policy should be to steer straight to the *essential* things. Through this work the teacher will have developed the noun, the pronoun—all the parts of speech in fact.

The success of the teaching of technical grammar depends upon how accurately and how thoroughly each step is made in the study of the skeleton of the simple sentence. When the pupil enters upon the study of the complex sentence all will be easy if he is clear about the simple elements; all will be a "weariness of the flesh" if he is hazy about those things.

The study of the compound sentence as a combination of simple sentences should come next.

FOURTH QUARTER.—*The Complex Sentence*: 1. The Adjective clause, with the relative pronoun.

2. The Adverbial clause, with the conjunctive adverb and subordinate conjunctive.

3. The Substantive clause.

The study of the complex sentence should be begun by the teacher's offering two such statements as *The man refused the bribe*, *The man was honorable*, to be combined into one statement; *The man who was honorable refused the bribe*. The

relative pronoun should be developed thoroughly, but in an elementary way, with such questions as what words in the second sentence does the pronoun *who* in the third sentence do the work of? What other work does it do? The student should be made to see that *who is honorable* does the work that a simple adjective *honorable* might do, or the adjective phrase of *honor*. Thence independent and dependent statements can be made clear. When this is accomplished the work of developing the adverb clause will be easy. The substantive clause is more difficult and should be left until last.

Each teacher will use his own devices for holding the pupils to work in analysis until each of these steps is accomplished. As a last resort the diagram may be used, but the constant effort should be to lead the pupils to see clearly, without the help of props of any kind, what the skeleton of the sentence is. A crutch is useful, but if a patient never comes to the point where he can walk without a crutch he is unfortunate indeed. This study of the sentence, if it is painstaking, will occupy the whole of the seventh year. The parts of speech and some of their classifications are to be learned because of their use in sentences and to review elementary teaching.

Class A.—Eighth Year.

A Study of the Parts of Speech.

In the eighth year the more technical study of the parts of speech should be combined with constant work in analysis. The purpose of the eighth grade work is to systematize and classify the knowledge of the student in grammar. The study of the verb becomes more and more exact until the pupil arrives at the point where he can make up a full conjugation of any verb in all possible indicative forms, and analyze the verb-phrases used. The study of the subjunctive mood should be touched lightly. But the study of the modal auxiliaries and the verb-phrases in which they are used should be much more thorough than our texts provide for.

Throughout the course, grammar work should be made practical; first by close attention to errors in grammar made by students in oral or written exercises. Students should be led, in every case, to see why one form is right and why another is wrong. When and where this criticism shall be introduced will depend upon the ingenuity and tact of the teacher; but it should not be omitted. Second, where difficulty arises in the interpretation of the text, in the study of history, civil government, or the classics, the grammatical structure should be examined. Perhaps the following order is about the best for the critical handling of the parts of speech, their definitions, use in sentences, syntax, etc.

FIRST QUARTER.—The noun, pronoun and adjective. Study carefully their classifications, forms, modifications, syntax, and all finer distinctions of real grammar. Analyze sentences with special reference to these. Parse much, until parsing becomes easy and definite. This is work for a quarter, when combined with composition work, reproduction and memory exercises, letter writing and the many plans used for variety and interest in the class. The test of the pupil's knowledge is in his application of principles in a practical way in writing and speaking.

SECOND QUARTER.—Verbs should be given an entire quarter. All their forms, uses, agreements and combinations are to be worked out carefully. Parsing, conjugation, analysis, critical definition, drill—these are all to be done over and over. Verbals are to be studied here with care as the last work—that is, infinitives, participles, and verbal nouns. Observe the closing suggestions under the section above.

THIRD QUARTER.—Adverbs, prepositions, conjunctions, interjections, and expletives, with a review of adjectives in close connection with adverbs should be given this quarter. Adjectives and adverb phrases may be especially emphasized

here in sentence analysis. So prepositions and conjunctions can best be understood in the analysis of phrases and clauses.

FOURTH QUARTER.—In the last quarter the teacher should plan reviews for all parts of the grammar that seem not well understood. Review difficult constructions of case, uses of relative pronouns, some verb forms and uses, the subjunctive mood, infinitives and participles, the various complements, and other things suggested by the teacher's tact and experience.

ARITHMETIC.

General Suggestions.

1. The aim in teaching arithmetic in the elementary schools should be to secure the greatest amount of mental alertness through topics of greatest practical value. All topics which are obsolete, should be omitted. The practical ends to be obtained are, (1) mastery of processes needed in the solution of the ordinary problems of daily life, and (2) accuracy and rapidity.

2. As a means of mental training, the specific ends to be kept in view in teaching arithmetic are (a) the cultivation of the power of observation; (b) the cultivation of the power of concentration or sustained attention; (c) the development and training of memory, and (d) the strengthening of the power to reason. Too great demands upon the reasoning power of young children, and the introduction of too complex problems retard the healthy development of this power rather than encourage it. Teach pupils the use of the fundamental processes, using simple problems involving small numbers.

3. Clear thought is essential in mental training and also in the study of arithmetic. While we use symbols extensively in arithmetic work, teachers should remember that symbols of numbers are not numbers, and that manipulating symbols is not mastering the thought processes of arithmetic.

4. Clear thought may be secured by correlating the arithmetic work with other school work and with the home life of the pupils and by using small numbers. But care should be taken that these problems are accurate in content.

5. In general new work should be introduced inductively through simple concrete problems illustrating the principles involved.

6. In the lower grades the greater part of the work should be oral and the problems so simple that they can be readily handled by the children. Even in the four upper grades more than one-half of the time of the pupil in the class should be given to oral work.

7. While the practical side of arithmetic should be emphasized, yet, after the concrete problems have furnished the basis for clear thought, a large amount of abstract work must be given in order to secure skill and accuracy in mechanical work.

8. In the selection and treatment of topics the logical unfolding of the subject should be entirely subordinated to the mental development and the practical needs of the child. The topical method of arithmetic has given place to a method that is in accordance with the needs of the child. Modern psychology has caused us to know better the needs and interest of the child and to arrange our courses to suit his interests. In general the simple elements of various topics should be introduced as the child is mentally able to grasp them and as the needs of daily life require that he should know them, the more difficult aspects of many subjects being reserved for later treatment. In selecting work to suit the daily needs of the child, the introduction of too many topics at one time should be avoided.

9. Pupils should be brought into as close touch as possible with the concrete

material under discussion in the arithmetic. They should weigh, measure, see and handle actual things. In dealing with an object the pupil should first estimate its length, area, or volume, and then verify his judgment by actual measurements. While the use of objects in the lower grades is absolutely necessary in order to enable the child to form the number concept, yet their use should not be carried too far, as they may become a hindrance to rapid work.

10. Too great reliance should not be placed on "method" nor should too great importance be attached to formal explanations by pupils. Especially in the lower grades is it important that pupils learn to do the work accurately and rapidly and the teacher should know that each child under his care is using the correct mental processes in his work.

11. The essential unity of topics should be constantly emphasized, e. g., the relation of a decimal fraction to the common fraction and percentage to both.

12. Make free use of the blackboard, but use pencil and tablet sparingly. It were better that a pupil go to class with his preparation in his head than on his tablet.

13. In written work a terse, clear, business form should be required and the work should be done with rapidity and accuracy.

14. As soon as principles are thoroughly understood "short cuts" and common sense methods should be encouraged.

15. Teach principles and processes and not pages of the book. You can do this best by following your book closely as a guide. Supplement the book whenever necessary, but any radical departure from the general plan of your adopted text should be carefully considered. You can teach the subject by following any good text.

16. A re-arrangement of the topics in order that alternation may be used is proper, and yet, this work must be done with care. No alternation in arithmetic is possible in the first four grades.

17. The personality of the teacher counts for much in teaching arithmetic. The good teacher will develop much power in his pupils in teaching them this subject.

18. If you fail to create an interest in arithmetic consider your work a failure and find a better method.

19. Ordinarily no home work in arithmetic should be assigned to pupils below the 5th grade.

20. Number games and number recreations can be used occasionally to good advantage. They create interest and are truly educational.

21. Teachers should remember that there are three kinds of work in arithmetic: Development, drill and review.

22. Pupils should be taught to check all their work and not depend upon answers in books. Checking also furnishes drill work which they need and gives motive to their work.

23. Five minutes spent each day in drill work in making rapid number combinations is very valuable.

24. Pupils should be taught to note carefully "What is given" in each problem and "What is to be found." Doing this saves time and prevents haphazard experimenting.

25. Such incorrect forms as the following should never be tolerated in written work:

$$3 \times \$5 = 15 \text{ or } 3 \times 5 = \$15 \text{ instead of } 3 \times \$5 = \$15.$$

$\$15 \div \$3 = 5$ barrels instead of $\$15 \div \$3 = 5$. (Find the ratio of one quantity to another like quantity.)

4 ft. \times 5 ft. = 20 sq. ft. instead of 4 \times 5 sq. ft. = 20 sq. ft. or 4 \times 5 \times 1 sq. ft. = 20 sq. ft.

$84 \text{ sq. in.} \div 3 \text{ in.} = 28 \text{ in.}$ instead of $84 \text{ sq. in.} \div 3 \text{ sq. in.} = 28$, or $84 \text{ sq. in.} \div 3 = 28 \text{ sq. in.}$

$1200 \text{ cu. ft.} \div 150 \text{ sq. ft.} = 8 \text{ ft.}$ instead of $1200 \text{ cu. ft.} \div 150 \text{ cu. ft.} = 8$.

$5\% = \$50$ instead of 5% of the cost $= \$50$.

10% of $\$40 = \$4 + \$40 = \44 instead of 10% of $\$40 = \4 . $\$4 + \$40 = \$44$.

$\$98 - \frac{1}{8}\% = \$97.87\frac{1}{2}$ instead of $\$98 - \$\frac{1}{8} = \$97.87\frac{1}{2}$.

$4+3 \times 5+5-6 \div 2 = 17$ instead of $-4+3 \times 5+5-6 \div 2 = 21$.

26. A review and careful organization of the important topics of arithmetic in the last two years of school is advisable.

Class D.—First Year.

Much of the number work of this year should be incidental but not accidental. See suggestions on hand work. First ascertain what the children already know and what they can do and then proceed to increase their knowledge and power. Use numbers whenever the need arises and make opportunity to use numbers for some definite purpose.

In the first year and the second year it is not possible to outline definitely just the work that each teacher should do in each quarter of the year, because the needs of the pupils in these years vary much. The following work which is suggested, contains material that all children should be familiar with by the end of the first year. When your children have mastered the work here suggested other work similar to this but with small numbers can be devised. No books should be in the hands of the pupil in either the first or the second year. The teacher should use many primary arithmetics as sources of material.

FIRST QUARTER.—Oral work. Count objects in the room, the boys in the class, the girls in the class, the desks in the room, the windows in the room, etc. Compare the desks as to length, height, etc. Compare the children as to height, count the boys in the class by 2's, by 3's, and likewise the girls. The children should have blocks, acorns, chestnuts, shells, corn, beans, shoe pegs, toothpicks, etc., for counting. Each pupil should have a foot ruler, divided into inches for measuring. After he has learned to count the inches on the ruler he should measure short lines drawn on the blackboard or tablet, and draw lines of definite length without ruler, and verify with ruler. Have pint and quart measures and have pupils measure with them and learn their relation.

SECOND QUARTER.—Continue Counting Work. Have pupils count to 100. Have pupils draw triangles, squares and rectangles, and also build with small squares larger squares and rectangles. Teach the correct names of these plane figures. Cut strips of paper one inch wide and one inch long, two inches long and one inch wide, three inches long, etc., to twelve inches in length. Have pupils choose by sight the three-inch strip, the five-inch strip, etc. From these strips teach square inch. Make two-inch squares, three-inch squares and divide into square inches. Make oblongs two inches by three inches and three inches by four inches and divide into square inches. The work in the first two quarters should be entirely oral.

THIRD QUARTER.—By actual measuring, solve such problems as the following: How tall are you? (Measure in feet and inches.) How wide is the door? How long is the desk? How wide is the window pane? How long and how wide is your book? How wide is the blackboard? How high is the table? Scores of such problems as these should be solved. It is well to have pupils estimate the answer before measuring. This trains them to observe closely and to judge accurately. Pupils should learn to write numbers in the Hindu numerals to twenty. They should also learn to write and solve such problems as $8+?=10$; $?-4=5$; $\frac{7}{-4} = \frac{6}{+2}$; $\frac{8}{-4} = \frac{3}{+4}$; $9-?=2$; $3 \times ? = 6$; $\frac{1}{2}$ of $4 = ?$; $6+2 = ?$; $7-3 = ?$ $2 \times 3 = ?$ 6 cents + 4 cents = ? cents. They should read $2+4=6$, "two plus four equals six;"

7-2=5, "seven minus two equals five." They can learn the correct names for these symbols now as easily as at any time and they should learn the correct name at first. Let them solve many concrete problems and abstract problems with small numbers. Have a supply of coppers, nickels and dimes. You can teach combination of 5's and 10's and many other problems with these. Have the pupils "play store."

FOURTH QUARTER.—Review and continue any work suggested in the other quarters. Do not neglect abstract drill work. Let pupils learn to read and write numbers in the Hindu notation to 100. Do not use combinations that exceed twelve. See that the work is done rapidly. Drill work is interesting if you put spirit into the recitation. The fractions $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ should be taught. Find halves, thirds and fourths of single objects, as apples, pieces of crayon, etc. Find one-half, one-third and one-fourth of the foot ruler. Compare a 2-inch and a 4-inch line; a 3-inch and 6-inch line; a 3-inch and a 12-inch line, etc. Find one-half of eight boys; six marbles, etc. 1-3 of six cents, 1-3 of 9 marbles, etc. Count by 10's to 100. Teach days of the week and months of the year, also twelve things make one dozen. In nature study, count seeds in a pod, leaves on a stem, legs and wings of insects. In making boxes for seeds and plants have children measure. Measure doll-houses, play-houses and other playthings. Have them use construction number in making envelopes, mats, rugs, etc. Give attention to measuring and counting in all manual or hand work throughout the year. Only such problems as arise from the needs of the child are real problems. One real problem is worth many artificial problems. The gallon, pint and quart measure should be used in measuring water or sand. Many problems can be based on these measures, such as 1 pt.= $\frac{1}{2}$ qt.; 4 qt.=8pt.; 1 gal.=8 pt.; 1 qt.= $\frac{1}{4}$ gal.; 2 qt.= $\frac{1}{2}$ gal., etc. A pint of nuts is worth 5c, what is 1 qt. worth? At 3c a pt., what are 3 pts. of milk worth? etc.

Class D.—Second Year.

FIRST QUARTER.—Review work of Previous Year. Work on combinations less than 20. Teach Roman notation to 20. Count by 2's, 3's and 4's to 20. Have pupils build the table of 2's in multiplication.

SECOND QUARTER.—Continue work on Combinations less than twenty. Have pupils do much actual measuring. Use bundles of ten sticks each to teach the meaning of 1 ten, or, 10; 2 tens or 20; 3 tens or 30, etc. If you have a set of scales have pupils do weighing to get correct idea of pounds, half-pound and one-fourth pound. By means of the foot ruler, yard stick and objects teach the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$. With liquid measure units and dry measure units teach $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$. With cents, dimes and nickels teach 1-5, 1-10.

THIRD QUARTER.—Continue work of previous quarter. Use numbers to 36. By means of the yard stick teach 36 inches=1 yd.; $\frac{1}{4}$ yd.=9 in.; $\frac{1}{2}$ yd.=18 in.; $\frac{3}{4}$ yd.=27 in. Have pupils measure paper ribbon, length of rooms, etc., in yards and quarter yards. Find the cost of $2\frac{1}{2}$ yds. of calico at 4c a yard; $3\frac{1}{4}$ yds. at 8c a yard, etc. Build the multiplication table of 3's and 4's and 5's.

FOURTH QUARTER.—Master combinations less than 40. Do much rapid drill work. With bundles of splints show the meaning of 100, 200, 300, 127, 348, etc. Have pupils learn to read and write numbers to 1000. Teach them to read time on the clock face. Use concrete real problems.

Note 1. Pupils in class D. should be given much work that requires motor activity.

Note 2. Class D. should be drilled on small numbers. It is a mistake to force them to handle large numbers.

Note 3. The above outline suggests in a general way the work to be mastered in these grades. The details must be worked out by the teacher.

Note 4. No alternation of work is possible in the first and second years. In crowded rural schools it may often be best not to have any regular number recitation in the first grade, but to give all the work outlined for the two grades in the second grade.

Note 5. Every school should be supplied with the following material for use in the lower grades:

A Set of Scales.....	\$2.50
A Set of Liquid Measures.....	1.25
A Set of Dry Measures.....	2.00
Educational Clock Dial.....	25
Educational Toy Money.....	25
Numeral Frame	25
200 Primary Counting Blocks.....	1.25
100 One-inch Cubes.....	40
500 One-inch Reels (Pasteboard).....	25

This material can be secured from supply houses at the above prices. When once supplied it lasts for years.

Note 6. Many number games can be used in Class D. The number situations arising from games furnish real problems.

Class C.—Third Year.

FIRST QUARTER.—Pupils may use some primary arithmetic as a text. Read and write numbers to 10,000. Teach addition of numbers less than 10,000 and less than six addends. Use splints to show that ten units make 1 ten and 10 tens make one hundred, or 100. Teach U. S. money, including the dollar. Use the dollar sign and the period and write dollars and cents. Add sums of money. Review the multiplication tables already learned and learn the 6's.

SECOND QUARTER.—Read and write numbers to 100,000. Teach subtraction. Show with splints how to subtract 48 from 75; 179 from 347, etc. Review addition. Check addition by adding the columns from the bottom and then adding from the top. Check subtraction by adding the remainder and subtrahend. Pupils should learn these checks and depend upon them rather than upon the answers in the books. Continue work on the multiplication table.

THIRD QUARTER.—Continue work on addition and subtraction and on the multiplication tables. Teach pupils to multiply by one digit multipliers. Pupils may be taught to check multiplication by casting out the nines. They cannot be taught the principles that underlie this method, but they can be taught to do the work. It compels them to be accurate and shows the necessity for accuracy. It makes them independent of answers. It gives further drill on addition. Review the compound numbers of the previous grades and make work a little more difficult. Complete Dry Measure, Liquid Measure, Time Measure and Long Measure tables, and memorize these tables.

FOURTH QUARTER.—Continue work begun. Teach pupils to multiply by two and three digit multipliers. Continue the checking. The multiplication table, "the key to arithmetic," should be thoroughly mastered to 10x10. The teacher in the third grade who teaches her pupils to know instantly and accurately the product of any two numbers less than ten has rendered them a noble service. In concrete problem work show that the multiplier must always be considered abstract. Teach the meaning of factors. Incidentally during the year review the fractions of the previous year. Much of the work of this grade should be oral.

If the text that you are using gives short division in the third grade, it may be best for you to teach it now and then review it in the fourth grade.

The forty-five combinations in addition and subtraction should be learned by this time.

Class C.—Fourth Year.

FIRST QUARTER.—Review multiplication and the multiplication table. Teach division by one digit divisor. Begin with 2 and make every step clear. "Make haste slowly." Teach pupils to check division by multiplying the quotient by the divisor and to the product adding the remainder to make the dividend. Use concrete problems and be careful in the forms of analysis. Such problems as these can now be used: If five horses cost \$875, what will 13 horses cost? At \$3 per bbl., how many barrels of apples can be bought for \$165?

SECOND QUARTER.—Continue work of previous quarter, solve such problems as: Find $\frac{2}{3}$ of 480; $\frac{4}{5}$ of 1,225; $\frac{8}{9}$ of 9,876; etc. 480 is $\frac{2}{3}$ of what number? $640 = \frac{4}{5}$ of what number? $\frac{3}{4}$ of what number = 120? 5-6 of what number = 1,280? etc.

$$\frac{1}{2} \text{ of } \frac{1}{2} = \frac{1}{4}$$

$$\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$$

$$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$$

$$\frac{1}{2} \text{ of } \frac{1}{3} = \frac{1}{6}$$

$$\frac{1}{2} - \frac{1}{4} = \frac{1}{4}$$

$$\frac{1}{2} + \frac{2}{3} = \frac{7}{6}$$

$$\frac{2}{3} \text{ of } \frac{1}{2} = \frac{1}{3}$$

$$\frac{1}{2} - \frac{1}{3} = \frac{1}{6}$$

$$\frac{1}{2} + \frac{1}{8} = \frac{5}{8}$$

$$\frac{1}{2} \text{ of } \frac{1}{5} = \frac{1}{10}$$

$$\frac{1}{2} + \frac{1}{5} = \frac{7}{10}$$

$$\frac{1}{3} + \frac{1}{4} = \frac{7}{12}$$

Pupils should be able to know such combinations as the above and to illustrate their meaning by diagrams, paper folding and paper cutting.

THIRD QUARTER.—Teach long division with two digit divisors. Teach checking. Continue oral drill work on combinations. Continue fraction work of the second quarter. Review denominate number tables. Complete Avoirdupois Weight, Square Measure and Cubic Measure.

FOURTH QUARTER.—Continue work on long division. Divide by three digit divisors. Review work of previous years. Teach difference between measurement problems and partition problems in division.

Class B.—Fifth Year—1911-12.

The work of the fifth and the sixth years has been outlined so that these years may be alternated. That is the fifth year may be given in 1911-12 and the sixth year in 1912-13, and the work continued in this way. The very best results will be secured by teaching the fifth year first. But if your 5th and 6th grades combined do not exceed 20 pupils, you will get better results by combining the two grades and alternating the work so as to secure longer recitation periods. In the upper grades more attention should be given to definitions, principles and formulas.

FIRST QUARTER.—Teach factoring. $24 = 12 \times 2$; $24 = 3 \times 8$; $24 = 4 \times 6$; $24 = 2 \times 2 \times 6$; $24 = 2 \times 2 \times 2 \times 3$; $24 = 2 \times 4 \times 3$. Pupils should know the prime factors and also the Various combinations of factors of all the numbers up to 60. Teach tests of divisibility for 2, 3, 4, 5 and 9. Teach G. C. D. and L. C. M. by factoring. Teach cancellation. Review denominate numbers of previous grades.

SECOND QUARTER.—Continue work of previous quarter. Teach fractions. Reduction to lowest terms; to higher terms; reduction of improper fractions to mixed numbers and mixed numbers to improper fractions; reduction to common denominator. Teach definitions and principles thoroughly. Teach the mechanics of addition, subtraction, multiplication of fractions. Have much oral work in addition, subtraction and multiplication with small fractions. Also, use real problems. Omit all fractions except those of small denominators. Drill for accuracy. Stress mechanical processes in fractions during the first part of the quarter, and introduce

problem material that the pupil is familiar with and that he meets in his experience. In this quarter the problems may be those arising in the home or in the school in gardening, manual work, etc.; the problems of the grocery store, the dry goods merchant, the hardware, the mill, etc.

Use the inductive method of presentation. Use graph paper. Do not use fractions with large denominators. Plot a school garden preparatory to spring work and use problems thus arising. Beware of problems that introduce situations that do not actually occur in business. Take problems from the farm and from business.

THIRD QUARTER.—Compound fractions should be taught as problems in multiplication of fractions and complex fractions as problems in division of fractions. If your text gives some of the elements of percentage in connection with common fractions, it will be well to follow your text. Even if your text does not have any percentage work at this point, give a few of the elements of percentage without any book work. Teach the relation of one fraction to another, as What part of $\frac{3}{4}$ is 2-3? What part of $2\frac{1}{2}$ is $3\frac{3}{4}$? etc. Pupils can now solve such problems as 2-3 of John's money = $\frac{3}{4}$ of Henry's, and John has \$3 more than Henry, how much has each? A number and its 2-3 and $\frac{3}{4}$ equal 87, what is the number? Henry can do a piece of work in 8 days and Tom in 12 days, in what time can they working together do the work? Teach pupils to give clear analyses of such problems.

Use concrete problems in area of yard, floor, walls, ceiling, etc. Use denominate numbers and fractions. Let the children gather their own problem material. Teach denominate numbers. Omit all tables that are out of use. Use only those problems that are likely to happen in the ordinary dispatch of business. In furnishing problem material see that the measurements suit the problem. Measure wheat with a half-bushel or a peck measure, milk with a gallon or quart measure. Let pupils have a piece of paper and compute the number of pieces of a given length that can be cut therefrom. Use graph paper. Draw illustrations to scale. Study range, township, section, quarter section, etc.

FOURTH QUARTER.—Continue work of third quarter of this year. Study railway maps. Make weather maps. Plot temperature curve. Study problems of economic advantage. Figure the actual cost of maintaining a farm, the income, and net loss or gain, and the cost and income of one issue of the local newspaper. Find the advertising rate, count lines of advertising. Compute for paper, labor, editorial, managerial, postage, etc.

Secure the plans for a building and from the plans compute cost of excavation, foundation, lumber material, mill work, labor, papering, plastering, etc. Taking the measurement from a building actually going up in the vicinity is the best. Lay out the school yards, compute areas, and perimeters of the designs, etc. Compute amount of seed necessary to plant the various plots.

Class B.—Sixth Year—1912-13.

The work of this year can be given before the work of the fifth year. But when so done should be preceded by a careful review of the fourth year.

FIRST QUARTER.—Review and study the principles of the Hindu Notation, and also the Roman Notation. Review the common fraction work of the first four grades. Continue decimal fractions. Teach addition, subtraction, multiplication and division of decimals. Teach the common aliquot parts of 100. Apply decimals to the solution of real problems. Review U. S. money.

SECOND QUARTER.—Study Metric System. Make actual measurements in this system. Study Longitude and Time.

THIRD QUARTER.—Study ratio, and partitive proportion. Introduce percentage. Show that common fractions, decimal fractions and per cents are only three forms of expression for the same idea.

FOURTH QUARTER.—Teach thoroughly the three cases in percentage. Use percentage in profit and loss problems. Teach the aliquot part method of computing simple interest.

Class A.—Seventh Year.

The seventh and eighth years should be alternated. Give the 7th in 1911-12 and the eighth in 1912-13. Continue to alternate. The seventh and eighth years do not depend upon each other at all, so that either year may be given first, and the pupil suffer no loss.

FIRST QUARTER.—Percentage and its Applications. Pupils should be made to realize as soon as possible no new principles are involved in percentage.

Per cents are only special forms of common and decimal fractions. The tendency is to use more common and decimal fractions, and to give less attention to per cent and per cent signs. Pupils should be taught to find 50% by finding one-half or dividing by 2; $12\frac{1}{2}\%$ is found by dividing by 8; $16\frac{2}{3}\% = 1-6$; $6\frac{1}{4}\% = 1-16$; $83\frac{1}{3}\% = 5-6$; $56\frac{1}{4}\% = 9-16$; $42\frac{6}{7}\% = 3-7$. Per cents that can be reduced to small common fractions should be changed to common fractions and the pupils will have no difficulty, if they have been properly taught in fractions. When per cents do not reduce to convenient common fraction forms, express them in decimals. Formulas and rules should receive little or no attention. Do much oral work. When written work is used, demand neat and accurate work. Avoid such errors as $10\% = \$25$; let $100\% =$ the cost; his capital is 100% ; $2-3 = \$40$; etc. Finding any per cent of any number and finding what per cent one number is of another should be emphasized. Profit and loss problems furnish excellent material for the application of the principle of percentage to practical problems. Few definitions need be learned. See that the pupil understands thoroughly all the terms introduced. Make real problems based on school reports, population tables, expense accounts, farm expenditures and profits, etc. Have pupils make real problems.

SECOND QUARTER.—Interest and Partial Payments. Pupils will like this work. Original real problems are easily obtained and should be used freely. Teach thoroughly the Business or Aliquot Part Method as the fundamental method in Interest. See that the pupils understand thoroughly the principles involved in this method. Then teach one or two other methods, such as the 12% or 6% method or the Cancellation Method. Do not teach more than two or three principal methods, but after these are understood, allow the pupils great freedom in using any other methods or forms of work that they may learn and wish to use. Allow pupils freedom, but be sure that they understand principles. Teach partial payments by the U. S. Rule and by the Mercantile Rule. Teach pupils how to write notes and indorse notes. Also how to fill blank forms for notes. Teach compound interest.

THIRD QUARTER.—Teach Bank Discount. Drill pupils thoroughly on the simple forms of business paper, such as notes, checks, receipts, drafts, bills, deposit slips, simple accounts, etc. In these papers give special attention to the form of work, spelling and punctuation. Have all notes, checks, etc., written with ink. It is an excellent exercise to have pupils keep the expense account at their homes, when the co-operation of the home can be secured. Here we have an excellent field for real problems. Teach the pupil how to keep an account with the "Wheat Field," with "Poultry," "Cattle," etc. It takes only a few days to teach simple accounts and every pupil should know this work. Teach Trade Discounts, Taxes, Life and Fire Insurance.

FOURTH QUARTER.—Exchange.—Review forms of business paper needed here. From the real business life of the community show the pupils the meaning of exchange and the necessity for it. Solve many real problems.

Stocks and Bonds.—Partnership is very simple and best taught as an introduction to stocks. The methods of the stock company have largely taken the place of partnership methods in the business world.

Begin with some small stock company with which the pupils are familiar. This makes the work real and gives it meaning. At first emphasize the meaning of dividends and assessments. Then pass to larger corporations and teach the meaning of market value, rate of income, etc. Use actual newspaper quotations and teach the pupil to read stock and bond quotations. Secure samples of stock certificates and bonds, so that the pupils can see the nature of these business papers. Review important work of previous quarters.

Class A.—Eighth Grade.

FIRST QUARTER.—Mensuration.—Review finding area of rectangles, parallelograms, triangles, trapezoids, etc. Find area of circle, diameter from circumference or from area, etc. Solve problems in carpeting, papering, painting, plastering, roofing, etc. Make a thorough study of lumber measure; visit a lumber yard or saw mill if possible. Study the measuring of cord wood, masonry, excavating, etc. Visit the wood yard, and understand each object studied. Study measurements of solids, cubes, prisms, pyramids, frustum of pyramids, cylinder, cubes, frustum of cones, spheres, etc. Give the pupils the geometric formulas for these volumes and teach to substitute the numerical values in the formulas. The same method may be used for areas. Apply these principles to finding the capacity in bushels, barrels and gallons of tubs, tanks, bins, cisterns, wagon-beds, granaries, standpipes, reservoirs, etc. Use the same principles in estimating hay in ricks, stacks, mows; corn in pen, crib and bins. Use any real problem. Have pupils make problems. Have pupils count the amount of lumber and cost of lumber used in building the fence and walks of the school campus. Secure price lists of building material and then count the amount of material in the school building and its cost. Do the same for some barn. Count the cost of fencing; of all kinds of cement, brick, board walks, etc. There is more training in such concrete problems than in the more abstract problems of the book, and they are more interesting hence the pupil works harder and develops power more rapidly. See work on agriculture and farm management.

SECOND QUARTER.—Ratio, Simple, and Compound Proportion, Involution, Square Root. Pupils should know the square of all numbers from 1 to 25; the cube of all numbers to 12. They should learn to find square root by factoring first, and then learn the longer form which is necessary for large numbers. Use the algebraic formula and the diagram also. Application of Square Root.

THIRD QUARTER.—Cube Root.—See suggestions for square root. Have a set of cubical blocks. Teach application of cube root. Cube root may be postponed until algebra is studied. Review G. C. D. and L. C. M. by factoring method. Land Surveying, including prime meridian, base line, the numbering of ranges, townships, sections and the division of section. Computing areas of city lots. Some of the more abstract work of the quarter may be replaced by concrete problems based on the work being done in history, geography, agriculture and elements of science.

FOURTH QUARTER.—Review important denominate numbers. Study the Metric System. Teach Longitude and Time. Review any parts of arithmetic previously studied by the class on which additional work will be helpful. Continue the solution of problems of the same character as those suggested for the third quarter. The following publications will furnish concrete facts on which problems can be based:

Reports of the Missouri Commissioner of Labor (Red Book). These reports

contain many statistics concerning industries in Missouri from which very interesting problems can be made. For these reports address Commissioner of Labor, Jefferson City, Mo.

Department of Commerce and Labor, Washington, D. C.

The Consular Reports issued monthly by this department give summaries of the commerce and finance of the U. S.

Department of Agriculture, Washington, D. C.

The Farmers' Bulletins issued by this department are distributed free to those asking for them. They are very helpful in teaching agriculture and many abound in concrete number facts on which problems may be based. See work on agriculture and farm management.

The reports of the census bureau will for the next two or three years furnish some very interesting material for arithmetic work.

Note I.—Sometimes it may be advisable to introduce algebra in the 7th or 8th grade. This algebra should be very elementary, covering the four fundamental operations, factoring the simple type forms, solving easy fractions, finding H. C. D. and L. C. M. by factoring, and solving many simple problems involving the use of one unknown quantity and a few problems involving two unknown quantities. Arithmetic should not be discontinued in these grades; but no pupil should have two recitations per day in mathematics. When algebra is given, it should alternate with arithmetic either by days or by weeks. As conditions now are in most of our rural and town schools, it is probably best to devote all the time of these two grades to arithmetic. Consult your County Superintendent if any doubt arises as to the wise course to pursue.

Note II.—In the third quarter of the 8th year when mensuration is being taught, teachers who have had a course in plane and solid geometry, may have their pupils secure compasses and straight edge and do some simple construction work in geometry. Only teachers who have had geometry should attempt this work. Others will most likely waste the time of pupils in doing useless and purposeless things. Even those who do this work must guard against teaching demonstrative geometry. The following are some of the things that may be done: Bisect a line; erect a perpendicular at a point in a line; drop a perpendicular from a point to a line; construct an angle equal to a given angle; bisect an angle; construct a right angle, an angle of 45 degrees, 135 degrees, $22\frac{1}{2}$ degrees, $67\frac{1}{2}$ degrees; construct a rectangle given its base and altitude; construct an equilateral triangle, given its side; construct an isosceles triangle from its base and altitude; construct any triangle from its three sides; construct an angle of 30 degrees, 60 degrees, 120 degrees, 150 degrees; inscribe a square in a circle, a hexagon in a circle, an equilateral triangle in a circle. The above work can be done with compasses and straight edge. But a protractor may be used for measuring angles.

GEOGRAPHY.

The general plan of the following outline is:

- (1) Oral Geography—Two years, grades three and four.
- (2) Elementary Geography—Two years, grades five and six.
- (3) Advanced Geography—Two years, grades seven and eight.

In the oral geography, no text book is used, alternation should be followed and where library facilities are wanting or the teacher is unprepared to do well so much oral work, both years may be combined, each forming a half year. Or it might be better to devote one-half of the third year to geography and one-half to the work outlined for nature study. These two subjects should be closely connected in this grade. Do likewise in the fourth year and alternate third and fourth years.

In the elementary course a text book is used and the teaching of geography and history is combined. These grades may also alternate.

In the advanced work, will be found the geography and history of Missouri. These are best studied together and require a text.

It is urged that supplementary books, geographical readers, maps, pictures and products be procured so the work may be concrete and real. With text books alone the work is apt to be dry and formal. Where maps are made from outlines, no great expense is involved. At the end of each year's outline, several reference books for pupils are suggested. It is hoped that every school will supply at least half of these books.

Third Year—1911-1912.

FIRST QUARTER—*A study of early man, showing the development of the race industrially and socially.*

As a source of stories, materials and plan of the work, the following books are suggestive: "The Tree Dwellers," presenting the age of fear; "The Early Cave Men," the age of combat and the "Later Cave Men," the age of the chase. It is important that the child know how the race existed without fire and what social changes came with its use. They should also learn how the simplest tools and weapons were made and how the early arts of weaving, tanning and pottery work were learned. How primitive man obtains food, clothing and shelter and how he develops as a social being is the general idea. A good oral teacher will not only read or preferably tell the stories of these early peoples and the conditions under which they lived; but will require the pupils to reproduce the stories. Better still she will make use of other forms of expression such as drawing, clay modeling, sand table work, paper cutting, etc. In this way the tools, simple homes and natural surroundings of prehistoric man are studied and variety of expression cultivated. Bring out that the discovery of means of making fire was of prime importance to the race, since fire affords protection from wild animals, enables the tribe to cook food and aids in the development of simple arts. Excellent suggestions for good oral teaching of the above subjects can be found in the books referred to.

SECOND QUARTER—*A study of civilized man thrown back on primitive conditions.* (Robinson Crusoe, Child's Edition.)

The child is here led to see the difficulties of savage life and the need of social co-operation. Excellent opportunity for thought work lies in having the child imagine himself in the place of Robinson Crusoe and try to solve his problems. The life of this voluntary exile furnishes splendid situations for dramatization.

THIRD QUARTER.—*Stories of primitive races to show how simple societies live.* Such books as "Eskimo Stories," "Little People of The Snow," "Two Little Indians", etc., may form the basis of the work. Excellent opportunity is afforded for story telling and the playing of games enjoyed by Eskimo and Indian children. It is essential that the imagination be stirred so the child can form a correct mental picture of the natural conditions that environ these races but not important that he should fully understand causes—many of which are too difficult for him at this time. Thus, the extreme cold, the long night, the igloo, the oily foods, the kayak, dogs, etc., may be studied and find adequate expression without trying to understand the cause of the climate, etc. In like manner other native races, as those of Africa, may be studied.

FOURTH QUARTER.—*The world as a whole.* (Seven Little Sisters.)—The globe is now introduced and the location of strange lands is pointed out. The work is that of simple analysis and land and water bodies are studied. This work is best done with reference to homes of people, or products supplied from abroad such as tea, silk, etc. The object is as much the study of humanity as of locality. Splendid material is supplied in the stories of "The Seven Little Sisters." Good oral geography demands that concrete pictures of different parts of the earth be formed. Child life of other lands is most interesting and brings to the learner in an attractive manner important facts of

physical forms, climate and human society. The home life, work and customs found in far away lands are to be compared with our own. Advantage is taken of the child's love of doing things to assist him in expressing ideas of other people and how they live by use of the sand board, clay modeling and drawing.

References for pupils: The Tree Dwellers, The Early Cave Men, The Later Cave Men, Robinson Crusoe, Eskimo Stories, Little People of the Snow, Two Little Indians, Seven Little Sisters, Little Folks of Many Lands, Winslow's "The Earth and its People," The Wide World, Lolami, The Cliff Dweller, The Story of Lincoln, Pratt's American History Stories, Vol. I, II, III, IV. The last mentioned are interesting history readings for this grade.

Fourth Year—1912-13.

FIRST QUARTER.—*How we are fed and clothed.*—Show in a simple way how animals and man supply these constant needs. Contrast the food and clothing of savages with that of more advanced peoples. In connection with food, study the farm if you have no opportunity for school gardening. In the vegetable garden note the growth of each plant and the processes it undergoes in reaching the markets. In a larger way study the field crops and animals connected with the farm. Special attention should be given to the dairy and poultry products. A visit to the grocery store suggests our dependence on distant lands and people. Rice, bananas, coffee, cocoa, olives, spices, pepper, and tea are interesting food products and show our relation to other parts of the world. Linen, laces, silk, ivory, leather, wool, etc., arouse an interest in distant lands. Show how food is preserved by canning, drying, smoking, salting, pickeling, cold storage, etc. Study in a simple manner tanning and weaving. Rubber and cotton receive special attention because of widespread use. Make use of primary types, stories, excursions and imaginary journeys so the work will not be abstract.

SECOND QUARTER.—*How we are sheltered. How we travel and communicate.*—Show that animals build homes of many different kinds for purposes of shelter and to provide a place to rear the young. Study these homes and see how they are adapted to the life of the animal. How did the Tree Dwellers and the Cave Men live? Study the homes of the Eskimo, Indians, Cliff Dwellers. Construct such homes from simple materials and have pupils tell stories of the home life of the people. Bring out the idea that shelter must be made from what nature provides as grass, weeds, sticks, hides, sod, rock, snow, ice, etc. In a more advanced state of society show how bamboo, lumber, iron, stone, brick, etc., are used. Study the advantage of the location of the home both for savage and civilized man. Make an excursion to a house under construction and note: excavation, foundation, floor plan, basement, windows, doors, etc. Observe the frame of the house; beams, joists, studding, rafters, siding, partitions. Study the work of brick and stone masons, carpenters, plasterers, plumbers, painters, etc. Several trips will be necessary to learn of the whole work. In the later ones note the arrangements for heating, lighting, ventilating. Note provisions for drains, water supply and beautifying of grounds. The latter will include lawn, trees and shrubbery, walks and drives.

Bring out the necessity of transportation by showing that many products required for food, clothing and shelter must be obtained from distant lands. Study means of travel in the home locality, beginning with the simplest, viz., human carriers. Study the domestic animals of various lands and compare their value to man. Reproduce accounts of journeys taken by stage, caraven, elephant, a river steamboat, an ocean steamship, or by rail. Study the improvement in all means of travel. The necessity of communication may be developed and mails, telephone and telegraph considered. There is no intention to exclude other fields of local industry, but the field is too varied to outline successfully.

THIRD QUARTER.—*Surface, drainage, soils, etc.*—Study slopes and notice that they largely determine the drainage, soils and plant growth. The relation to farming, travel,

and the progress of the people will be readily understood. On a field trip learn of hillside, flood plain, rock outcrop, gullies, spring, branch, pond, marsh, etc. Look for evidences of weathering and erosion. Study the various soils, as gravel, sand, clay, loam and note the relation to plants. Such excursions are the means of properly studying direction and distances. Simple maps should be made of the places visited and accounts of what was seen related in class. The region should be reproduced in sand table and good pictures of similar areas studied.

FOURTH QUARTER.—*Weather and climate.*—No attempt should be made to explain the more difficult principles; but local observations showing the changes from day to day should be made. These relate to pressure, temperature, moisture, winds, storms and the condition of the sky. Simple experiments may be introduced to show that the air has weight, records of temperature at different hours and places should be tabulated, lastly force and direction of wind noted. Observations should be begun early and carried through the school year that the season's changes may be studied. It is best to study frost, fog, rain, etc., at the time they occur. Evaporation and condensation should be studied by experiment, though no scientific explanation need be offered. The cause of change of seasons, principles relating to winds, distribution of rainfall, and similar subjects are deferred till the seventh grade. Nature poems relating to wind, rain, and seasons should accompany this work. In all consideration of weather and climate the influence on plant, animal and human life must be studied. Stories of peoples living in different climates, bringing out their food, clothing, homes and habits of life are particularly valuable.

References for pupils: Stories of Industry, Vol. I and II. Aunt Martha's Corner Cupboard, Chamberlain's, "How We are Fed," "How We are Clothed," "How We are Sheltered," "How We Travel;" Long's Home Geography, The Story of the Indians of New England, Burton; Stories of Great Americans for Little Americans, Eggleston; Stories of Pioneer Life, Bass; Turpin's American History Stories. Pupils should be encouraged to read some easy history stories in this grade.

Reference for teachers: McMurry's Excursions and Lessons in Home Geography and other "Home Geographies."

Fifth Year—1911-12.

FIRST QUARTER.—*The general study of North America and the United States.* Too little time and emphasis has been put on the introductory study of North America and the United States. The great geographic facts of location, surface, coast, drainage, climate, plants, animals and peoples must be made to stand out clearly and be seen in their true relation. Without this general analysis what follows will lack clear interpretation. Too little recognition has been taken of the close relationship of geography and history in the fifth and sixth grades. In studying North America call to mind the discovery and exploration by story and biography. Recount the daring voyages of Columbus, the Cabots, Hudson, Cartier, Balboa, Ponce De Leon and others and describe the countries they visited. Trace the wanderings of De Soto, Cortez and Pizarro. Compare the difficulties these bold explorers encountered with those we would experience in going over the same territory now. Use maps freely to show physical areas, rainfall, vegetation and density of population as well as political and historical maps. An abundance of pictures will make the work concrete, real and interesting. The natural advantages of the United States in location, extensive coast suitable to fishing and trade, diversified surface and climate calling out a response of variety of soils, vegetation and occupation. Note the ease of interior navigation by Great Lakes and large rivers. The vast mineral wealth, extensive forests and productive soil must stand out clearly. Study the early settlements and see how they were influenced by geographic factors. In this connection it will be seen that the fishing, commercial life of New England was very unlike the agricultural, plantation life of Virginia and that each was different from frontier hunting life in the middle west. Note the work of Lewis and Clarke, Daniel Boone, Austin and others in early exploration. Contrast the lands as they

found them with their present condition. Study Indian life, noting the race qualities and early relation to white settlers. Study the characteristics of our European ancestors, and tell why they wished to find homes in the New World. Study other races in America as the negro and Chinese.

SECOND QUARTER.—*State Groups.*—The outline here does not vary much from that presented in our best texts but liberal use must be made of supplementary readers, products and pictures. The best plan of presenting the work is by type studies and imaginary journeys. The type should be simple and the maps and descriptions of like character. Such studies as that of a coal mine, cotton plantation, oyster fishing, Minneapolis or Pittsburg as trade and manufacturing centers, orange groves of Florida, the forests of Washington and Alaska and similar subjects will prove interesting and profitable. As an illustration of how this work proceeds, the following outline for the coal mine is suggestive: Sinking the shaft, difficulties and expense. Ventilation. Danger of cave in, floods, explosions, fires. The coal breaker in hard coal region. Hoisting, pumping, shipment. Soft coal, its use and products, gas tar, coke, etc. Location and extent of coal fields. The relation of coal to manufacturing, commerce and domestic needs. Cities which owe their growth to coal. In forming vivid pictures of such industrial types and others of a physiographic nature, the use of the stereoscope and views are to be strongly recommended. The imaginary journey brings to the pupil in an attractive form things seen in their natural relation. It should not be forgotten that this is the time in the child's life commonly known as the drill period. Advantage should be taken of this to fix in mind the localities found on the map and such general facts as comparative areas, length of rivers, altitude of mountains, products, etc.

Vital statistics may be introduced but their changing character will require wise subordination to more general truths and principles.

THIRD QUARTER.—*The dependencies of the United States. Our American neighbors.*—Here again history is correlated with geography in tracing our territorial expansion. Show how each territory was acquired and how valuable. Recount the finding of gold in California, the annexation of Texas and the struggle for the Northwest. Canada, Mexico, Central America and the West Indies may now be compared with the United States and contrasts noted in climate, industries, government, etc.

FOURTH QUARTER.—*South America.*—Study the continent as a whole, contrasting its unfavorable natural conditions of location, surface, coast, climate, absence of interior seas or lakes, lack of coal, etc., with the advantages of North America. Call attention to the jungles of the Amazon, the well nigh impassable Andes, the straight mountainous western coast, the rainless desert and the insect pests. The great possibility of extensive river navigation, wide areas of grass lands, the precious metals, etc., will be taken up. By a study of exports and imports, determine what trade will be carried on with the United States. Compare the industrial progress, education and governments of South America with our own. Study each country to determine which is most progressive and why.

References for geography.—Carpenter's North America; Carpenter's South America; Great American Industries, three vols.; Our American Neighbors; The South American Republics; Allen's Industrial Studies.

References for History.—Blaisdell and Ball's Hero Stories from American History; By same, Short Stories from American History; Tappan's American History Stories. Ruth of Boston; Peter of New Amsterdam; Calvert of Maryland; Mary of Plymouth; Richard of Jamestown; Stephen of Philadelphia; Eggleston's First Book in American History; Eggleston's Strange Stories from American History. Also many pioneer stories, hero stories, and easy biographies of Americans.

In connection with the study of geography in the fifth grade, the pupils should read many of the history books here suggested.

Sixth Year—1911-12.

FIRST QUARTER.—*Europe*.—Further opportunity is here presented for combining geography and history. It is advisable that this be done particularly in the study of the British Isles where our early connection with the "Mother Country" may be briefly traced, showing the causes of separation and the part geography took in the struggle. It is well to study the national characteristics of Europeans and to show where they have settled in large numbers in America. Aside from North America, Europe deserves greater emphasis than other continents and more than one quarter's work may be required. Where such is thought necessary, condense the study of Africa, Asia and Australia. Show that Europe offers the best natural advantages as the home of civilized man, viz.: Location, most extensive coast, least general altitude, freedom from extremes of climate, vast mineral wealth, no deserts, varied products, etc.

SECOND QUARTER.—*Africa*.—Here is presented a favorable opportunity for contrasts with continents having better natural advantages. Call attention to location in hot belt, trades and resulting deserts, compact form with limited coast, high average elevation, making most rivers unnavigable, fever breeding swamps, tropical jungles and ferocious animals. The native tribes are interesting but the emphasis should be placed on Egypt, the Barbary States and South Africa, where most progress in civilization has been made.

THIRD QUARTER.—*Asia*.—Study the continent as a whole, noting and explaining the general features. Give particular attention to India, China and Japan. Study the characteristics of the Mongolian Race and learn of their habits, customs and manner of living. It is important that industrial possibilities be considered in their relation to the awakening of China and the development of our Oriental commerce. The work of England in India, Russia in Siberia, the modernizing of Japan, etc., are facts of real significance. Mounted pictures and supplementary readings will add interest to the work.

FOURTH QUARTER.—*Australia and Oceania*.—Special attention should be given to the value of position in geography. In this regard note the unfavorable location of Australia. Determine the cause of the large desert area. Consider occupations briefly bringing out their relation to the surface and climate. Locate the chief cities and study the distribution of population with reference to natural advantages. New Zealand should be studied with reference to surface, climate, occupations and government of the people. Call out the relation of Australia to Gt. Britain and see in what way it is of advantage to the English.

References for geography: Carpenter's Europe, Asia, Africa, Australia; Winslow's Geographical Readers, IV and V. Children of the Palm Land, Little People of Japan, Taylor's Boys of Other Countries.

References for history: Akimakoo, Famous Men of Greece, Famous Men of Rome, Famous Men of the Middle Ages, Dickens' Child's History of England, Blaisdell's Stories from English History.

Seventh Year—1911-12.

FIRST QUARTER.—*Geography of North America and the United States*.—Here study advanced types to illustrate causal ideas. The aim should be to get the child to think. Develop geographic principles inductively by applying them. Study the physiographic and climatic regions of North America in a large way. Note the effect of these on plant distribution, importance of rivers, density of population and volume of commerce. To do this well the teacher should prepare large wall maps, showing physical features, rainfall, plant realms, number of inhabitants, trade routes, etc., as well as political facts. If outlines of wall maps be procured, the appropriate colors can be filled in and the actual expense is slight. If blackboard outline maps can be had, this work can be done with crayon. The large stencil outlines are cheap and useful. Make a rapid survey of the United States, treating it from a natural, physiographic, climatic basis

and pay little attention to States as such. Select physical types of broad application e. g. Hudson river, Great Lakes, Pike's Peak, The Great Basin, Puget Sound, Chesapeake Bay or the Mississippi delta and make numerous comparisons. Along with these use commercial types such as cotton, rice, sugar, pine lumber, petroleum, corn, etc. Ideas on conservation are not to be neglected. Train the pupil to think on problems of immigration, irrigation, Panama Canal and other questions of great national geographic character. Use commercial products freely and study means of production in agriculture, mining, manufacturing, etc. Point out the close association of history and geography in the development of our nation. The teacher must be familiar with such books as Brigham's *Geographical Influences in American History*, and Semple's *American History in Its Geographic Environment*.

SECOND QUARTER.—*Geographic Principles.*—It is thought advisable to place this work in the seventh grade and let it follow the advanced study of North America, because of its difficulty and the opportunity to lead up to it by seeing the principles applied to our own country. No attempt is here made to outline fully, but mathematical ideas of shape, size, rotation, revolution, seasons, etc., can best be understood by concrete work requiring simple apparatus, drawings, actual observations, etc., rather than by committing to memory poorly understood definitions. Study the full importance of the inclination of the earth's axis. Distinguish land forms in their relation to occupation. Note that rivers differ greatly in their relative value to man and that their usefulness depends largely on land elevation and climate. Coasts should be studied as to extent, kind and use. The atmosphere is difficult and principles referring to determining causes of climate are more valuable than an extensive study of the underlying cause of storms. Deal principally with causes for variation of temperature and the general wind movement. Rainfall is a very important factor and its distribution should be understood. The fact that constant winds modify climate greatly and ocean currents to a slight degree should be noted. The way plant zones are determined by climate, altitude and soils deserves special consideration. The racial and social studies of man bringing out ideas of the influence of environment, ways of living and government are of prime importance. The discussion of geographic principles as outlined in any of our best text books may be followed, but clear explanation, interpretation and application of them devolves on the teacher. It is best that the teacher's preparation include a knowledge of laboratory physiography.

THIRD QUARTER.—*The geography of Europe.*—Follow the general plan outlined for North America and the United States. The importance of European civilization and its close association with that of America is the reason for its further study. In the study of any country in the higher grades the following topical outline is suggested: (1) Location with reference to climate and trade. (2) Extent, comparative area. (3) Land forma, coast, drainage, climate, etc., in their human relation. (4) Natural resources in their relation to occupations. (5) Animal and plant life with reference to man. (6) Population, race, national traits, social and industrial progress. Supplementary readers are of special value and at slight expense a splendid picture collection may be obtained. These will intensify interest and give clear and vivid impressions. The study of the Rhine introduces the travel plan, gives concrete pictures of real life and focuses the work on an important center. Other types may be used. Problems involving close analysis of fact may be presented. Some of this nature are: Why is Belgium so prosperous? Russia so backward? Ireland so poor? Geography answers three questions, *what? where? why?* Neither should be neglected, but in the upper grades the last needs constant and growing emphasis.

FOURTH QUARTER.—*Regional and comparative studies of Europe and America.* Opportunity is here given to study land forms, climate, occupations, governments, racial and national characteristics in those areas where civilization has developed best. It is time we begin to point out relations and summarize the work. Advanced types may be used and class reports required. How people live in the two continents is to be observed and great interest will be found in the study of dress, customs, ceremonies,

etc. Study the most important works of man in both continents. No special part of any text book is taken up in this quarter but it will prove helpful. Use the geographical reader to give a basis for the work.

References for seventh year.—Herbertson's *Man and His Work*; and good texts on geography; any of the references given in the fifth and sixth grades; Carpenter's *How the World is Fed*; *How the World is Clothed*; *How the World is Housed*.

Eighth Year, 1912-13.

FIRST QUARTER—*General survey of the Old World.*—Include centers of greatest importance in Africa, Asia and Australia. Study the influence of the white race in the general progress of man. Compare coast, rivers, climate, deserts, etc., of the different land masses. Summarize by the use of proper wall maps, general altitude, rainfall, plants, density of population, trade routes and commerce in the world as a whole. Study colonial possessions and notice the improvement in savage life through such influence. Review South America.

SECOND QUARTER—*Industrial geography.*—It is thought advisable to give a quarter's work to the summary of world commerce. Study by map, chart and graph, raw material, manufacture, transportation and consumption. Exports and imports should be compared. Methods of agriculture and ways of doing things in a different countries are interesting and important. More complex commercial types as steel, sugar, paper, etc., may be introduced. Statistics should be presented by the graph and scenes of production by the picture. A commercial map showing sea ports, trade routes, railroads, cables, etc., should be made and used.

THIRD AND FOURTH QUARTERS.—*History and geography of Missouri.*—These studies are best understood when taught in combination and a full half year is here given for the work. Take up early French and Spanish exploration and note the first permanent settlement. Locate oldest towns and explain geographic position. St. Louis. St. Charles. The Louisiana Purchase. Missouri as a territory. Where did first immigrants come from? Daniel Boone. Burr and Wilkinson. First newspapers. Lewis and Clarke. New Madrid earthquake. Missouri Compromise. Benton and Barton. State Seal. Visit of Lafayette. The capital. The Platte Purchase. Mormon troubles. Doniphan's expedition. Benton and Jackson Resolutions. Railroad construction. Kansas troubles. Secession. Price-Harney agreement. Battles of Boonville, Wilson's Creek and Lexington. Order No. 11. Price's raid. The Constitution of 1865. The test oath. The new constitution of 1875. The payment of debt. School fund. Local option. Decrease in taxation. Public institutions. Public schools.

Geographically, we should consider location, size, surface, drainage, climate, plant and animal life, industries, transportation and commerce, government, chief cities. Special attention should be given to the work of reclaiming waste land, river improvement, good roads, better agricultural methods, need of desirable immigrants, growth of cities and advancement in education. The growth of state pride should be fostered. Collections of pictures, products and maps should accompany this work.

References for eighth year.—Longman's *New School Atlas*, Musick's *Stories of Missouri*, Rader's *History and Government of Missouri*, Blue Book, (State Department, Jefferson City, Mo.); any of the fifth, sixth and seventh year references.

United States History and Civil Government.

These subjects are to be pursued through the seventh and eighth grades, and are to be so correlated as to constitute one course. To that end suggestions are here offered as to how this course may be conducted. In connection with these suggestions certain books, which will be helpful to the teacher and the pupil in doing the work, will be mentioned.

As a means of special preparation for his history teaching, the teacher would do

well to read a book or two on the teaching of history, such as: McMurry's *Special Method for Literature and History in the Common Schools*; Hinsdale's *How to Study and Teach History*; Mace's *Method in History for Teachers and Students*; Kemp's *Outline of Method in History*.

No outline of the course is here offered. It is presumed that a text will be used and every text that is worth while is so arranged that a fairly good outline may be worked out by the teacher himself by merely following the topical headings or the marginal annotations of the text. Instead of an outline of the topics that might be discussed by the pupils in their pursuit of this course, there is offered here a series of suggestions as to what subjects should be stressed and how certain phases of the work may be done. Some of these suggestions will be given in connection with the discussion as to the various quarters' work, others will be given at the close of this discussion.

It must be borne in mind that the work of the seventh year and that of the eighth are to be given alternately. It will make no material difference which year's work is given first so far as difficulty is concerned. The seventh year's work should be given in 1911-12 and the eighth in 1912-13.

Seventh Year—1911-12.

FIRST QUARTER.—Study the Indian tribes; their manners, customs, tribal relations, food, utensils, weapons, clothing. Read *Hiawatha*. Study the civilized Indians, Mexican and Peruvian. Read *The Fair God*. See that the pupils know their geography. History without geography is like a body without bones.

Study the discoveries. Use a globe and show what their purposes were. Find out something about the conditions in the Old World; the ignorance and curiosity of the people. Find out about Venice, Genoa, Ferdinand and Isabella, Queen Elizabeth, Marco Polo, Gallileo.

Study also explorers of the Western Continent, at least four each of English, Spanish and French. Have pupils find outside of the text as many things as possible about explorers, their aims, and their accomplishments.

SECOND QUARTER.—Colonization. Ideas of colonization as expressed by Coligne, Sir Walter Raleigh, French Catholics, the Dutch. Where the colonies were located and why they were located there. Conflicting claims to territory. Just now is a good time to begin to stress the idea of institutions. Careful attention should now and in all later courses be paid to the following: *Political life*; *Industrial life*; *Educational life*; *Social life*; *Religious life*. Each one of these may be carefully outlined by the teacher. For example, in the study of *Social life*, find out about houses, furniture, food and its preparation, occupations, amusements, clothing as to materials and fashion, social gatherings, etc. Hart's *Colonial Children* will be interesting reading for the pupils.

The pupil can learn, with the assistance of an energetic teacher, what was most worth while in their civilization, how much they brought with them from Europe and how much was due to environment.

Interest will be added to these features of colonial life by making comparisons of life in the typical colonies such as the New England group, the Middle colonies and the Southern colonies, also the Dutch settlements in New York and the German settlements in Pennsylvania and Delaware. Finding similarities and contrasts and accounting for them will be valuable work.

THIRD QUARTER.—This quarter should cover the period from the beginning of the struggle between the French and the English for supremacy to the close of the Revolution. Military events are important here but they should not receive too much attention. Note the relative strength of French and English. Compare them as to numbers, military experience, skill in fighting, independence of home governments, freedom of individuals from restraints of state and church. Find which people had grown the more democratic. Study the causes of the Revolution and distinguish carefully between cause and occasion. Note the influence of the westward movement.

Hart's Camps and Firesides of the Revolution furnishes a great deal on the social conditions of the time. The history text will furnish an outline for the work.

FOURTH QUARTER.—This quarter should cover the period from the close of the Revolution to the adoption of the constitution. That part of the text in Civil Government which deals with the national government should be studied here. (The natural place for studying the national government is the place where it comes in the study of history). The Constitutional Convention, the call for it, its personnel, and the great document created by it should receive much attention this quarter. It will be well to call attention to changes that have been made in our government since 1789, that these changes may be familiar and later receive their proper historical setting. The work of the Continental Congress, too, should be studied in connection with a study of the Articles of Confederation. The Ordinance of 1787 should be analyzed in detail and recognized as a monumental product of the demands of the time for concerted national action. The text on Civil government should furnish the basis for the work of this quarter. John Fiske's, *The Critical Period*, a book which should be in every school library, will be most valuable as a reference work for both teacher and pupil. Such works as Dole's *The Young Citizen*, Judson's *The Young American*, Dunn's *The Community and the Citizen* will be read eagerly and with much value by the pupils.

Maps should be made during the seventh year's work illustrating the boundaries of colonies, conflicting claims, highways of travel, etc.

The pupil should know that *real* history is to be found in such works as Parkman's volumes, McMaster's *History of the American People* in seven volumes, Morris's *Hero Stories*, Fiske's works on Colonial History, Eggleston's *Beginners of a Nation*, etc. He should also know that a text-book on history is simply an outline. Every library should contain some of the books named in this paragraph.

Eighth Year—1912-13.

(Alternates with seventh year.)

FIRST QUARTER.—This quarter should cover the period from the adoption of the constitution to the election of William Henry Harrison in 1840.

SECOND QUARTER.—From the election of William Henry Harrison to the close of the Civil War in 1865.

THIRD QUARTER.—From the close of the Civil War to the present time.

FOURTH QUARTER.—Local and State Government, with some review of the National Government.

It is recommended that in the first three quarters' work of this grade special emphasis be put upon the social and industrial phases of our history. Such topics as the westward movement of the population, canals and railroads, tariff, internal improvements, slavery, development of the different industries, immigration from foreign countries, and the banking systems of the nation, should be given special prominence. Many of these topics will lead to a fuller study of certain other topics as, for example, the westward movement will necessarily involve a study of the territorial expansion of the United States. To this end the teacher will find Coman's *Industrial History of the United States*, and Spark's *Expansion of the American People* particularly helpful in preparing him to emphasize these phases in his class work. The latter book is not too difficult to put in the hands of the pupils of the eighth grade, but it is more than likely that the first book will prove too heavy for frequent use by the pupils of this grade. Special attention to these subjects is recommended because it is felt that the study of American History should result in the pupil's having some intelligent understanding of the problems that are before the American people today. Of all these, the social and industrial problems seem to be pressing most heavily for immediate solution. It is therefore desirable to give the historical setting for these problems, and this can be done only by giving due attention to the social and industrial phases of our history. It is all the more important that this treatment of our history should

be undertaken in the grades, since the vast majority of our school children never get into the high school where these special subjects can be better studied, and if they are to get anything on the subject at all while in school, it must be in the grades.

A few other matters that are not so exclusively social and economic should be given considerable attention, such as the rise of the various political parties and the reconstruction of the South after the war. And since the course is a combination of history and government, it will be well to give special attention to governmental matters, such as constitutional amendments, important legislative acts, and important judicial decisions.

Attention is called to Hart's *How Our Grandfathers Lived*, as a book full of interest to the pupils on the period prior to Civil War.

All of the history references suggested in the fifth and sixth years will be found helpful in the seventh and eighth years. In addition to the books suggested in these grades and in the seventh grade, a few well chosen biographies should be in the library. See also the references on the geography and history of Missouri. Such books as Thwaites' *The Colonies*, Hart's *The Formation of the Union*, Wilson's *Division and Reunion*, should be familiar to the teacher and some of the easier chapters in such book should be read by pupils.

The making of outline maps by the pupils is highly recommended. Some of these should be prepared outside of class and some in the class. The McKinley Maps or the Foster Maps are excellent. They can be had in different sizes and either singly or in tablets. Several series of maps may be made. For example, one series could be made to represent the expansion of the United States and another to represent the Presidential elections. Outlines for the first three quarters can easily be made from the history text and for the fourth quarter from the text on Civil Government.

MUSIC.

In many states teachers are required to pass an examination on music in order to procure a certificate to teach. While no such requirement is made in Missouri, the children of our state are entitled to the pleasure and satisfaction that comes from the ability to read music and sing. By following the suggestions here made any teacher can help his pupils to learn music.

The Course.—By applying to any one of the companies publishing music books a graded outline of the entire course in public school music may be obtained for about fifty cents. Any one of these will give you the sum total of all that is expected in the schools. None of them will fit your case exactly. You can see, however, what should be done and adapt the outline to your particular case.

The best way of judging what is right is by trying it on yourself. If a course makes every step clear, then that is the course to use. Do not be deceived by high flown phrases, psychological terms, etc. High ideals are great things to have, but they are gained by every plain methods. That which is simple, straight-forward and easily understood by you, that by which you can develop yourself, is what you can use in the development of others.

Plan for a one-room school.—To arouse an interest in the work, begin with an interesting song, taught by rote. (If an instrument can be secured so much the better.) This song must not be too difficult for the younger students or too simple for the older. (FOLK SONGS are excellent to begin with). After considerable interest is aroused, begin the study of reading. For example, using any book now published, sing every fourth exercise the first year. The second year begin with the second exercise and again use every fourth exercise. The third year begin with the third exercise and follow the same plan. Fourth year do again the same way. The fifth year begin over again, as the children will have forgotten the work of the first year. Continue the plan throughout the remaining grades.

In this way each year presents new material in a graded series of exercises, easy to begin with for the benefit of new students and yet not old to the former students. The lower grades will, of course, not do so well as the upper in the advanced part of the work, but as they are to go over the same ground, practically, several times it is the advanced class that must be constantly worked to. To teach the reading of songs is not a complicated matter at all. Some teachers teach the syllables through familiar songs, adding the syllables as an addition verse. This is good if not carried on for too long a time. Others teach the syllables as they teach the scale. This is the easiest and most direct way. After the syllables have been fairly well learned, encourage the learning of new songs by their use. If there is a piano or organ in the room use it to accompany the song after the song has been read by syllable. Reading by syllable does not mean the naming through of the syllables without regard to pitch. Do not waste time teaching the letter names of the lines and spaces except in relation to naming the key. Where there are four grades in a room divide the work accordingly.

Technical knowledge.—In vocal music the technical comprises the mastery of all problems of sight singing, which includes: ability to read from the staff in all the keys, to sing pitch accurately, correct attack, breath control, tone signatures, accurate feeling of time and ability to express it, time values of notes and rests, etc.

Suggestions.

1. Study *music* yourself.
2. Use new material constantly.
3. Don't guess at pitch. Use a pitch pipe.
4. Learn to know when a thing is right and when it is wrong.
5. Get good *tone quality* by insisting on it in speech as well as in song.
6. When it is necessary to make a correction, make it in as direct a way as possible.
7. Make corrections, by use of your own voice, or by instrument, only when you see that the pupils are absolutely unable to work out the corrections for themselves. Do not let them flounder around with things they have had no way of learning. Be quick, but not hurried in what you do.
8. Five or ten minutes twice a day should be used for music.
9. A little time should be given to sight singing daily.
10. From twenty to forty new songs should be taught every year.

Some songs that all children should know by heart:

America.
Columbia, the Gem of the Ocean.
Star Spangled Banner.
Old Kentucky Home.
Yankee Doodle.
Dixie.
Suwanee River.
Home, Sweet Home.

Other songs to learn:

Marseillaise.
Holy, Holy, Holy, Lord God Almighty.
Some Christmas songs.
Missouri.
An Arbor Day song.
A Thanksgiving song.

Books for the Teacher.

The Child Voice in Singing, Hardy-Novello & Co., New York.
A Short Course in Music, American Book Co., Chicago.

School Song Book, C. C. Birchard & Co., Chicago.
 Melodia, Oliver Ditson & Co., New York.
 Elements and Notation of Music, Ginn & Co., Chicago.
 School Room Music, Giddings, Congdon & Co., Chicago.

WRITING.

In teaching writing the final result must be kept constantly in mind. That system should be adopted which will give the best results after years of use, rather than the system which appears to give the best results at the end of a week or a month. To be a good writer one must write legibly, rapidly, and so easily that endurance is assured. To reach this end requires careful practice under competent direction. The teacher should keep in mind that writing is a subject in which much time is given to the formation of habits, and little time to the acquiring of information. The teacher should see that right habits are formed from the beginning, and that these habits are strengthened by persistent practice.

From the beginning the teacher should emphasize the *manner* of writing, rather than the product, that is, he must insist on good position, proper pen-holding, correct movement and sufficient speed regardless of the visible result on the paper. If he follows the opposite plan, and insists upon a perfect product, the pupil assumes an awkward position, uses a cramped finger movement, and writes so slowly that his lines are tremulous and angular rather than strong and smooth.

Ease of movement makes possible skill in execution. The child moves his larger muscles much more easily than his smaller muscles. The muscles of the shoulder and arm come under his control much earlier than do the muscles of the wrist, the hand and the fingers. The child beginning should be sent to the board, or given blank paper and a large pencil with a soft lead, and encouraged to make large flowing movement exercises. From the beginning insist upon a free strong movement and at least fair speed. Develop in the child confidence in his own ability by giving him only easy exercises at first and showing him just how to make them. Imitation plays an important part. If the teacher can *show* the pupil it is much more effective than to *tell* him. A copy should be put on the board for the entire school. The teacher should demonstrate at the board just how the exercise should be made. He should *show* how to sit, how to hold the pen, what position the paper should occupy on the desk, and what speed and movement should be used in the execution of the copy. Position, penholding, movement and speed are now the important things. The copies now are only *means* for developing the habits which are really the *ends* to be attained. It is often better not to let the pupil touch the pencil to the paper until he has shown his ability to assume the proper position, hold the pencil properly, and make the proper movement with the proper speed. To secure the correct rate of speed it is often necessary to count as the pupils write, and to encourage them to count for themselves as they practice on the regular movement exercises. These movement exercises should always be given at the beginning of the writing period, and should be introduced during the period whenever the pupils show a tendency to emphasize form of letters at the expense of freedom of movement.

After placing the copy on the board and giving the necessary general directions the teacher should give attention to the individual pupils who may be practicing incorrectly. Notice first the general position of the body. The pupil should sit fairly erect. His body should not touch the desk in front, nor should he lean against the back of his seat. He should be nicely poised with just a little weight on his left hand, which is used to hold his paper, and no weight on the right arm except the weight of the arm itself.

Then notice the manner of holding the pen. The hand should rest lightly on the

tips of the third and fourth fingers or on their finger nails. The first and second fingers should be slightly curved, and, with the thumb, should hold the pen lightly, not tightly. The wrist should be nearly flat.

The muscular movement should be used. In this movement the arm rests on the cushion of muscle just below the elbow, and the hand and arm are moved as a unit, the impulse really coming from the shoulder. The large muscles do the work, and one can write for hours without fatigue. One who uses this movement is exempt from writer's cramp. In the matter of movement two extremes are to be avoided. The most common error is the use of the finger movement. This brings into play the smaller muscles which in childhood are undeveloped and not yet thoroughly under control of the mind, and which, even in adults, are easily fatigued. The pupil addicted to the finger movement usually draws the paper too close to the body, gets the elbow too far back and too close to the side, and turns the hand over so far that its side rests upon the paper. Another error in movement, not so common as the finger movement, is the whole-arm movement. This consists in writing with the arm raised off the desk, only the hand touching. It gives freedom of movement, but is difficult to control, and is tiresome.

The old writing masters advised writing slowly to get the form and then practicing for speed. Experience has shown this to be a mistake. Many have practiced sufficiently long to acquire a good "slow" hand only to lose all semblance of good form when they tried to write rapidly. An important principle in teaching is: "Put together the things you would have go together." You wish speed and good form to go together as a final result in your writing. Then you must put them together in your practice.

You can interest your pupils in rapid writing more easily than in slow writing. Make writing appeal to them as a subject in which they can develop and demonstrate skill. Take samples of the best writing, good movement considered, and display them where pupils and visitors may examine them.

Use pens after the third grade—a good business pen, good paper, good ink.

First and second grade pupils should never use pens.

Use a cork-tipped or wooden holder which the pupil will not have to grip tightly. A good teacher of writing will be hindered rather than helped by the old-fashioned copy-book. Do much of the teaching from the board. Be enthusiastic yourself, and arouse enthusiasm on the part of your pupils.

The Palmer Method of Business writing, costing only 25c by mail.

DRAWING.

"As the course of adult life is determined by environment, so a course of school work is determined by the conditions of child life." We should try through the different courses of study to put the best possible phases of all courses before the pupils and thus insure the best and most helpful conditions. "It is the child, not the course of study, which should be taught."

Drawing should be made of vital importance to the child, for his mental, physical and spiritual uplift. Courses of study are made to lead the child to see, to train the hand to express in an intelligent way the forms studied. We are not trying to make artists, but to enlarge the pupils' vision to see beauty in the ordinary things around them and to express that beauty intelligently.

The general lines of work included in a good course in drawing are given under the heads: First, Nature Study; second, Color Study; third, Pictorial Drawing and Composition; fourth, Construction and Design; fifth, Productions of the Great Artists Studied.

Materials.

Manilla paper, white and tinted, 6X9 and 9X12 inches, should be used. A soft pencil and eraser or art gum. Colored crayons, eight colors in a box, red, orange, yellow, green, blue, violet, brown and black. The Dixon crayons, or Binney and Smith crayola, or crayograph by the American Crayon Co., are all good mediums, and add much to the pupils' interest in the subject of drawing.

Water Colors: The Prang three colored box, red, blue and yellow, (from which all the other colors may be made by mixing) or the Prang eight colored or the Milton Bradley eight colors, which are put up in good tin boxes with brush. There is little need for expensive models. A course in drawing should be so arranged that the materials called for are simple grasses, leaves, flowers, fruits, vegetables, and such models as cups, bowls, pitchers, etc., found in any home.

The study of individual trees and color contrasts during the different seasons should be pursued throughout the grades.

Growth, Blossoms, Fruit.

Nature never reveals her secrets to the careless observer. To understand why weeds and flowers, fruits and vegetables are beautiful, we must study them; their lines of growth, their shapes, colors, their leaves, flowers, buds, seeds, and seed pods. Bring all these things to the school room and draw them.

Design.

Design matures from plant forms. It is possible to work out an endless number of designs from geometrical lines and shapes; but many of our beautiful ornaments are worked out from some growth of nature. The lotus flower alone furnished the Egyptians with hundreds of ideas, and they are still beautiful after many centuries. The honeysuckle supplied the Greeks. The designers of the past went to nature for inspiration; so designers now seek plant forms which may be applied or adapted to the decoration of the object.

Drawings from Objects.

Beauty in common things. One of the results that comes from the study of still life form is a correct and accurate habit of work. We can learn from it to estimate proportions to measure, and draw fore-shortened lines and surfaces, and to detect change from different points of view. Objects of simple construction without ornaments, of pleasing proportion and color should be chosen as models. First, block in with loose sketchy gray lines that will show the proportion and general shape. Avoid details, such as handles, spouts or other features, but draw the general shape or form; then add the finishing points, as spouts, handles, etc., and finish off the drawing.

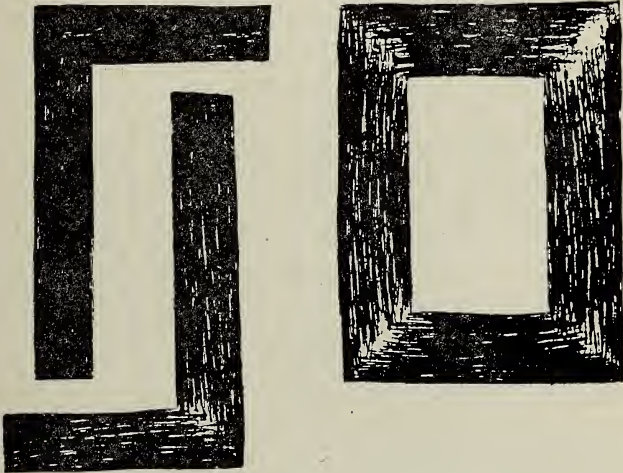
Pictures.

The pictures for picture study, that pupils may know the works of the great masters, may be obtained for the small sum of from one cent to five cents each from the Perry Picture Co., Malden, Mass., or the Brown Picture Co., Every teacher should secure copies of the best art productions. The school room should be made more inviting by the composition of the world's greatest artists. Teachers often feel that there is little time for this work and that the only time for drawing is the specified time on the program, but Nature Study, or some lesson in zoology or botany, often in reality furnishes opportunity for the best drawing lesson.

Out of Doors.

In sketching in a picture we must study something of the true representation of certain objects. We must be sure that these objects are seen from a point of view that will make an interesting picture. Still life or flowers can be arranged to suit us, but we must find in out-of-door sketching a position to make a pleasing picture. While riding on the train we see, looking through the window, many beautiful compositions which are constantly changing. Looking through the school room window the number of objects we see in a composition, increases or decreases as our distance from the window. With the finders illustrated below, the objects will increase or decrease in number in the composition according to the distance the finder is held from the eye.

To make the finders, take two pieces of paper 3X4, cut as illustrated.



The Little Picture in a Big One.

Take an interesting picture of some landscape, move your finder over the picture and see how many smaller pictures you could make, just as the window gives suggestions for many different pictures. In using finders you make your picture twice as large as the opening or larger.

The two-piece finder is adjustable. By sliding one piece over the other, the size of the picture may be changed at will without changing the distance from the eyes.

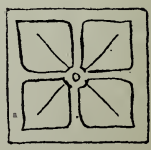
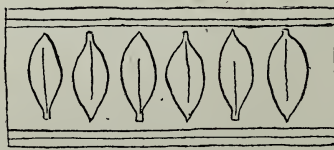
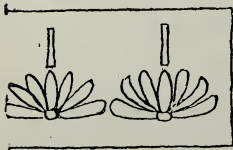
This course is divided into primary, intermediate and grammar grade drawing. Each division is subdivided into first, second, third and fourth quarters. This enables the teachers to plan a little more closely, and cover a definite amount each quarter. Drawing should be alternated with writing.

PRIMARY DRAWING.

FIRST QUARTER.—*Nature Drawing*.—Place leaf forms of different varieties or seed grasses with one or two leaves, before the pupils. Give them a little time to study the form. Be sure that they see the parts, then let them try to sketch lightly the form studied. Use colored crayons, pencil, or chalk. Try to secure bold but free expression. Do not accept tiny cramped drawings. The larger, free drawings are what should be encouraged.



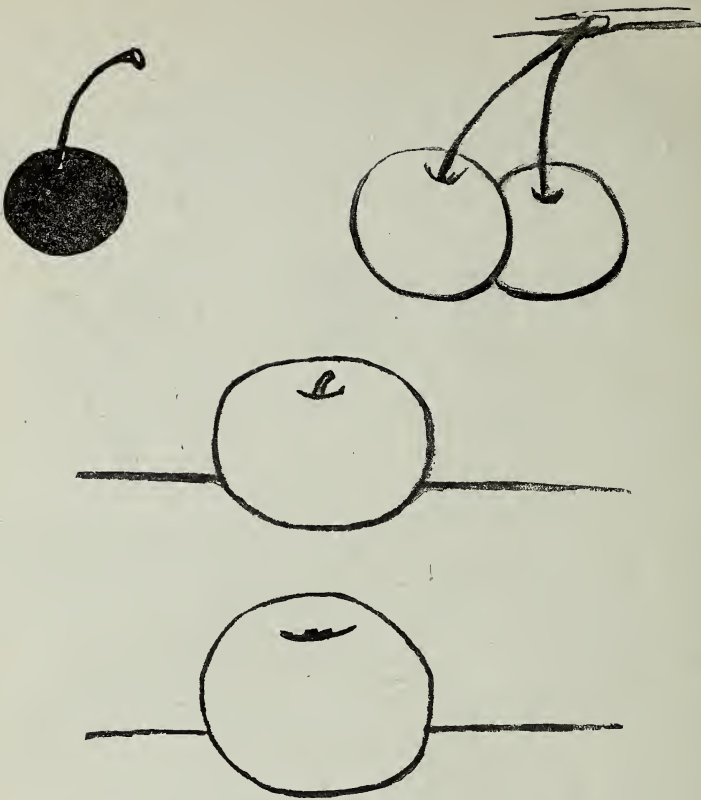
It is necessary to put into practical use some of the simple forms studied. Make a border of the leaves, a unit design, a flower design for book covers, or a grass drawing for a little calendar.



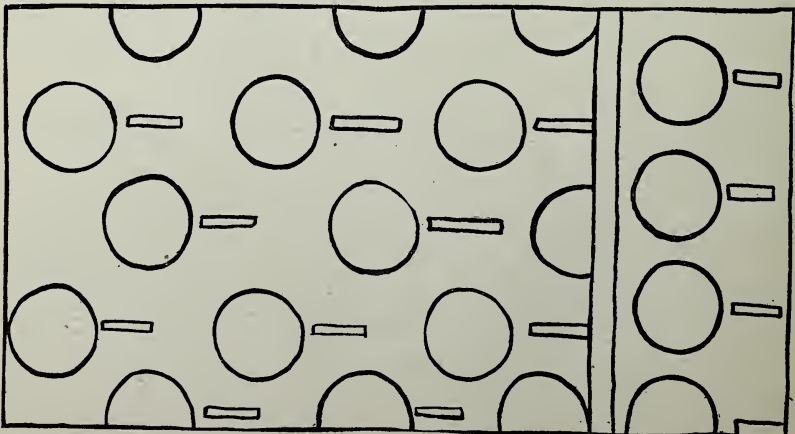


Landscape Study. Ask the children to study the sky—its coloring at different times during the day—the coloring of the ground and water. Let them express simply a little scene, showing ground and sky. After observing color let them use the crayons. Ask the children to study the sunset sky. Where is the color the most vivid? What colors are seen? Make a drawing with color showing a red sunset; a red-yellow sunset. Suggest that the scene be used as a picture. Mount the specimens. Make a calendar using the picture.

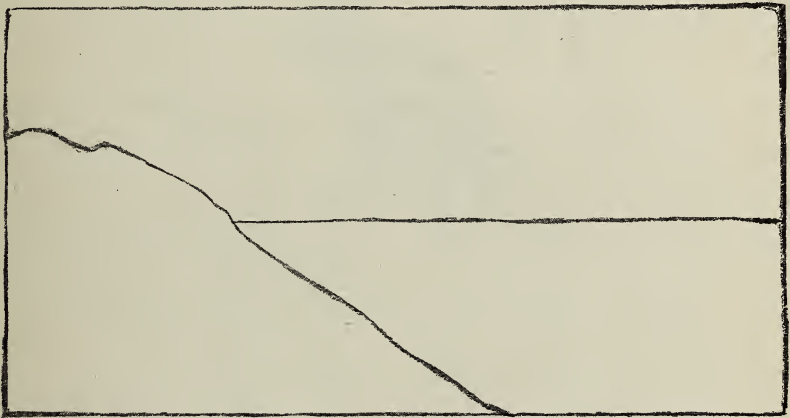
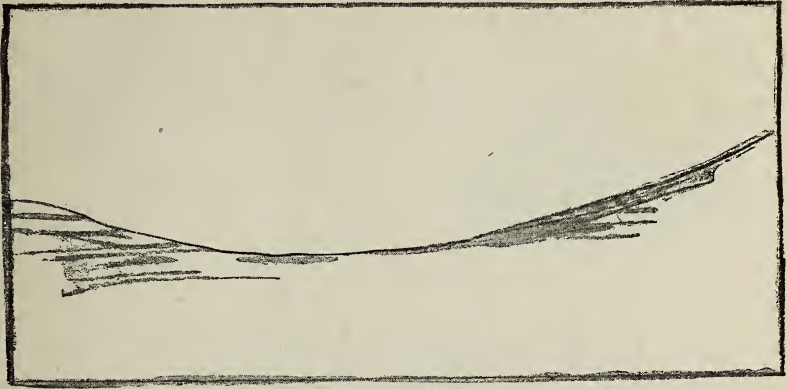
SECOND QUARTER.—Place an apple, a ball, or cherry before the pupils to study. Let them attempt an outline or color in mass, the shape of what they study. Make a silhouette of any one of these forms.



Design. Make a border using one of these forms as a unit. Make an all-over pattern using the circle as the unit. Cut a pattern of paper and use mechanically. The design may be colored with colored crayons. Try to show the children that light tints giving a delicate coloring are best and most pleasing.

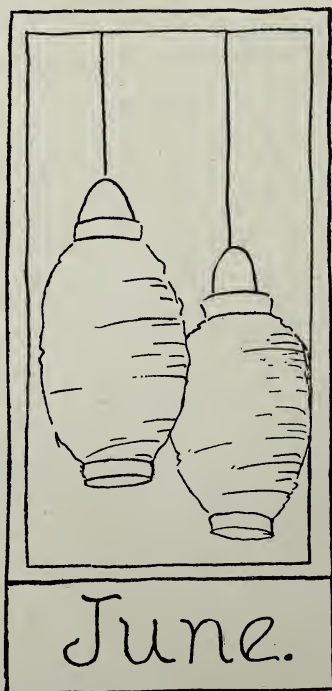
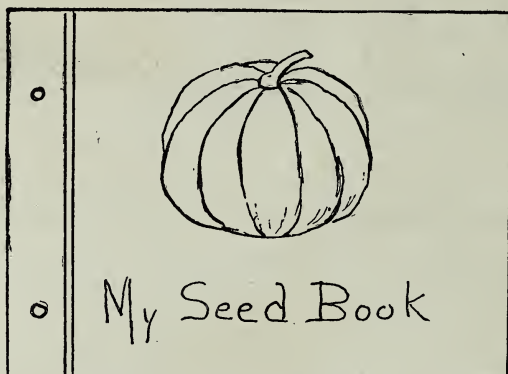
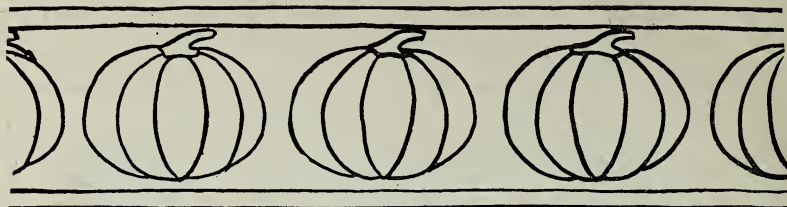


Continue the drawing of simple landscapes. These may be colored in tones of one color. Make three tones of red, orange, yellow, green, blue, violet, brown and black. Name the tones as light, medium and dark tones.



THIRD QUARTER—Hang a Japanese lantern before the pupils. Draw and color using the crayons. Draw a pumpkin. Make a "Jack-o-lantern." Make use of the drawings for calendars, book covers, etc. Cut the motif and use the paper pattern. Color with crayons.

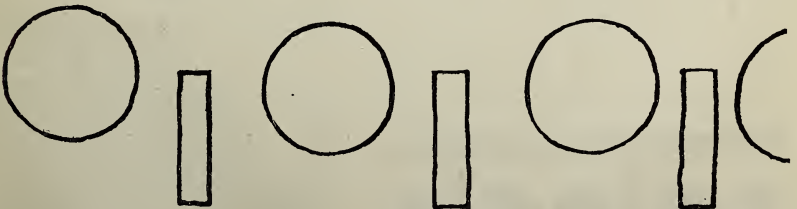




FOURTH QUARTER. Make a drawing of a rabbit. Try to cut the form from paper. Color in black, making the form a silhouette. Draw the cat. These forms may be drawn, using the checked paper, or the forms may be drawn in making a border, or book cover decoration.



Continue the study of color in making color scales and use in designs.



Picture Study. Hang the picture before the pupils. Ask for a story concerning the picture. What does the picture tell? Who is the artist? Find out all about him. Let the pupils tell or write the story.

List of pictures for primary grades.

First Steps, by Millet.

Hiawatha, by Norris.

Two Families, by Gardiner.

Facinating Tale, by Mme. Ronner.

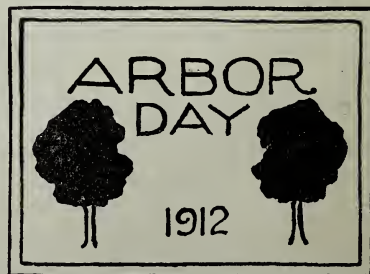
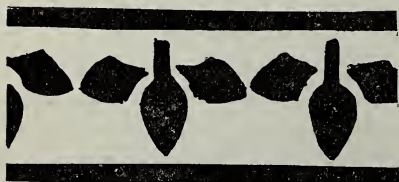
Feeding the Birds, by Millet.

The Drinking Trough, by Dupre.

Suggestions.—Teachers should use the drawings for school decoration. All the pupils' work should be placed on a screen or pinned to the wall, so that they may be studied; the best pointed out and otherwise encouraged, the poor corrected and encouraged. Use the drawings for program posters. The products of the drawing class should be used for school-room decoration.

INTERMEDIATE DRAWING.

FIRST QUARTER.—Simple sprays of grasses, seed tops, and leaves should be placed before the pupils and studied. Let them study the general forms, and express them as simply as possible. Use colored crayons or brush and ink or color. Make drawings of trees in silhouette, and then arrange them in pleasing form.



Study trees as to simple outline. Study a tree as seen from the window. Make a booklet of the different trees studied.



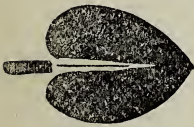
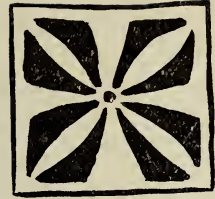
Landscape. Make a simple landscape, including one tree. Make an arrangement showing a water-line. These scenes may be colored in tones of black to white, or colored with crayons. Use the pictures for calendars, or mount on card board, or colored paper for wall decoration.





Continue the study and practice of color combinations: red and green, blue and orange, violet and yellow. Make tones of each of these colors.

SECOND QUARTER.—Make a unit of design, using a leaf as a pattern. The following units may be drawn by pupils, and cut, using the pattern to draw from. Color, using light clear color.

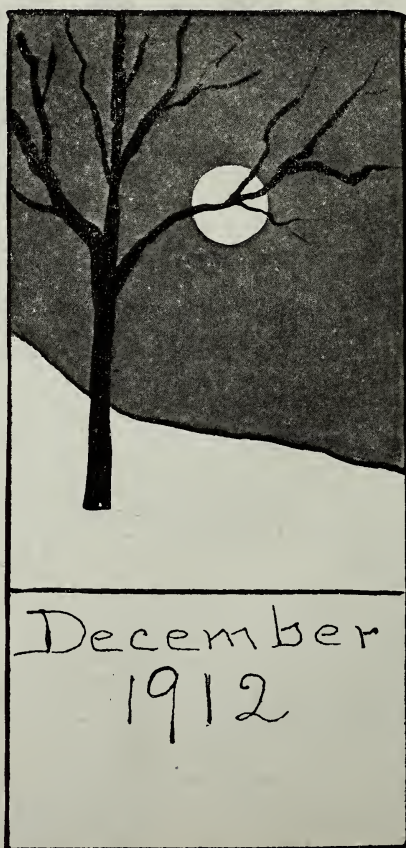


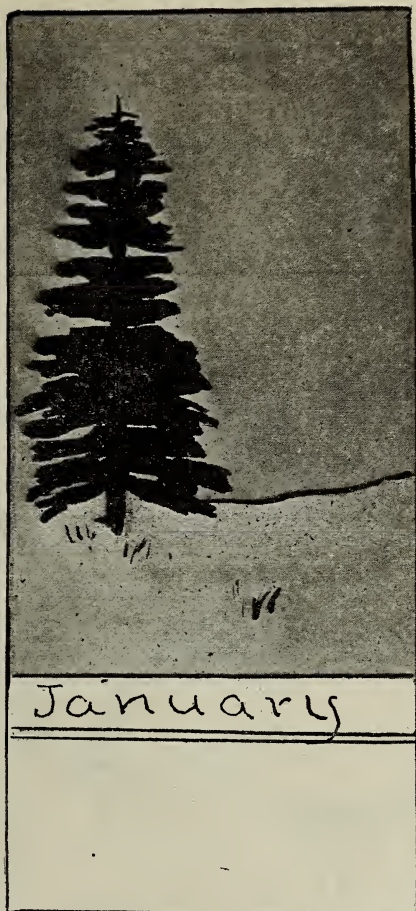
Draw from a common object like a pail, cup, bowl, flower pot. These objects may be easily obtained from the homes. Always insist that the pupils study the object well before attempting to draw. Make a table-line or rest-line. Color in black and white or the tones of any one color.



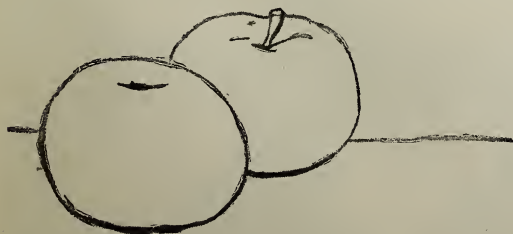


Continue the study scenes and make use of them in mounting on colored paper, and in calendar making. Color the scenes in tones of any one color, or in tones of black and white. Study a moon-light scene with a tree, or with water surface.





THIRD QUARTER.—Study objects such as hat, cap, Japanese lantern. Place such objects before the pupils to study before attempting to draw. Place two objects already studied, one a little in front of the other, as an apple and an orange, two apples, two lanterns. Color with colored crayons.





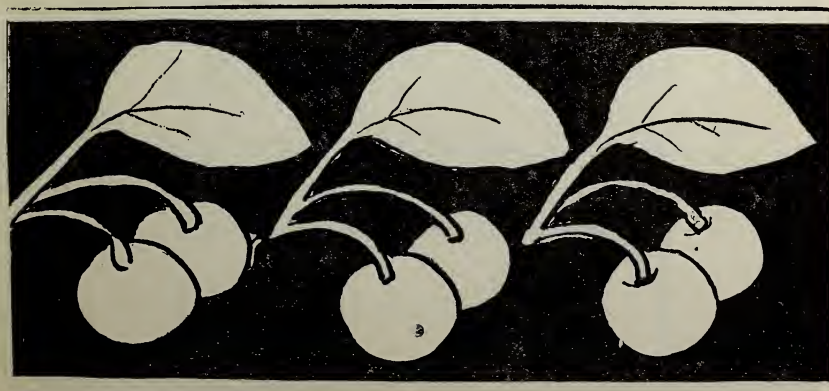
For design work use the leaf or flower form as a motif. The natural flower form or leaf form may be made regular, or conventionalized. These forms may then be cut from paper and used as patterns. Let the children make arrangements and then color, using any color as tones. Try to keep patterns as simple as possible, and make pleasing arrangements. Color washes may be made with water colors, using any one of the primary colors.



FOURTH QUARTER.—Draw from nature, buds or branches. Make a calendar appropriate for the month. Draw from sprouting seeds and flowers.



From the flowers, fruits, or buds, make a motif to use as a pattern, or for an all-over design border, or book cover. Color in tones or in black and white.



Draw from vegetables, or fruit forms. Color as nearly as possible from the object. Draw the objects, using a wash of clear color.



Picture study for intermediate grades.

Shepherd and his Flock, by Bonheur.

An Old Monarch, by Bonheur.

Sistine Madonna, by Raphael.

Children of Charles I, by Van Dyck.

Pied Piper of Hamelin, by Kaulback.

Sheep of Berry, by Bonheur.

Find out all possible about the artist.

What does the picture mean?

Where is the picture now?

What is pleasing in the picture?

What is the central thought in the picture?

GRAMMAR GRADE DRAWING.

FIRST QUARTER.—Draw a nature piece, a branch with fruit, a flower. Conventionalize a leaf. Make a conventional design and color in tones of black and white.



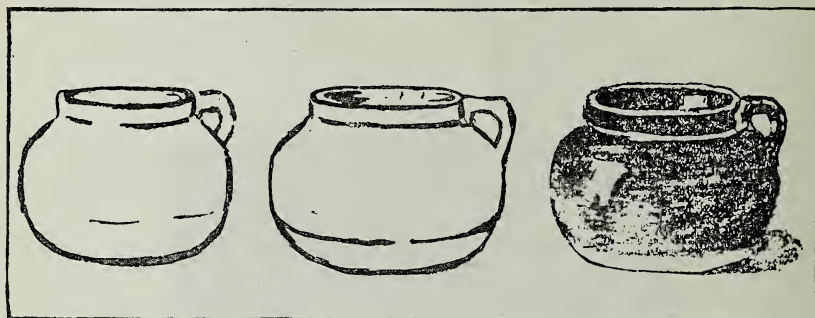


Nature Units



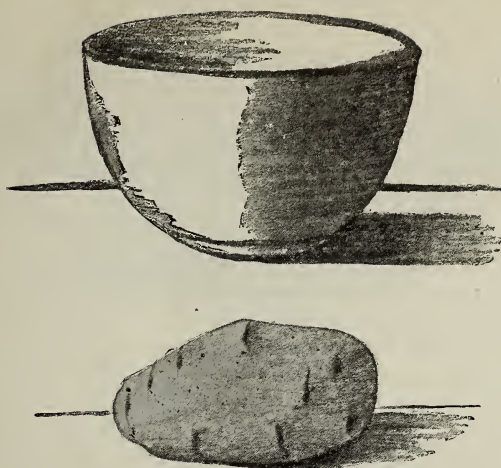
Conventionalized

Draw from objects large enough to study light and shade. What is high light? What is shade? Shadow? There should be no cross-light in the room. Make the shade with a strong clear broad lines. Make a bowl, cup, jug, or flower-pot, and fruit or vegetable forms. Use tinted paper or manilla for drawing of objects to express value. Make outline drawing. The color or value of the paper may be used to represent the value of the object, or a part of it; the light expressed with white chalk, the dark with pencil. The sketch shows a three-toned picture treated in this way.



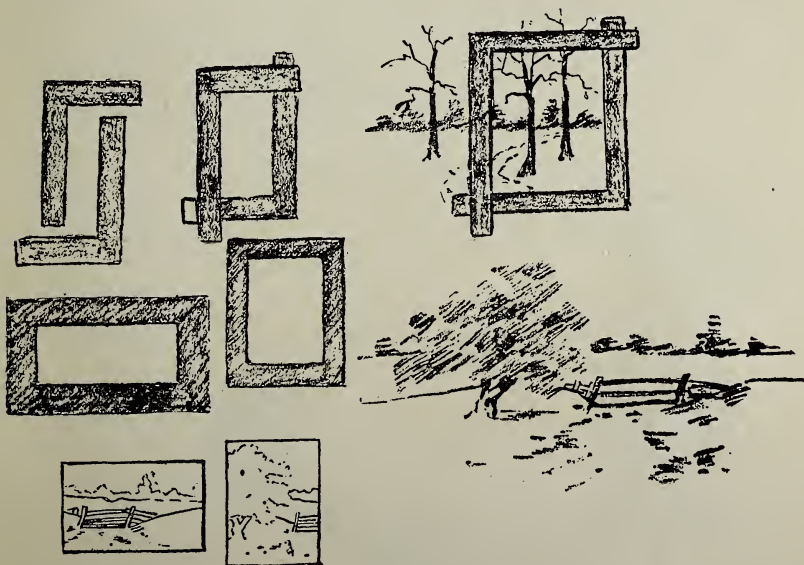
Make sketch of a group of two objects, showing one object slightly behind the other, as shown below, treated in the same manner as above.



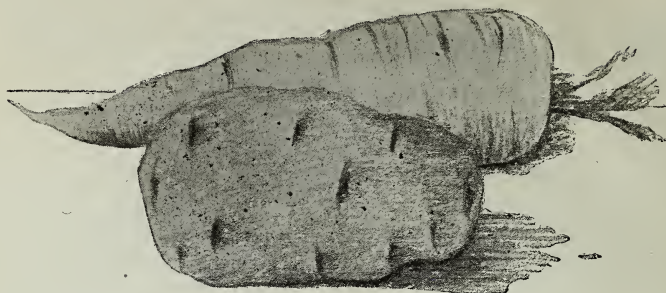


The teacher should show the strong points by the use of chalk on the black-board.

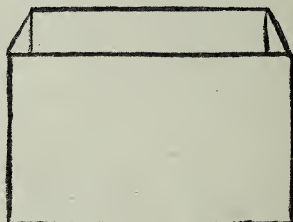
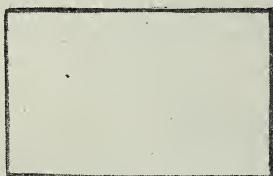
SECOND QUARTER.—Make a nature drawing from the window. Make use of the finders in obtaining a pleasing picture. Color with crayon or with water colors. Mount and use as a wall decoration.



Group two or more objects studied. Show light and shade.



THIRD QUARTER.—Place a box, book, or cube on the eye level. Draw as seen. Place same objects below the eye level and draw in outline.



Draw a scene with a road, a fence. Study the line of perspective. These scenes may be colored with crayons or water colors. After the scene is drawn with a fence running from the back ground toward the right, change and draw it running to the left. Note the perspective. Place a book with the corner toward the pupil. Study the perspective. Apply the same line of perspective to a house, a barn.





Put 63 & 64 on same sheet



Put 63 & 64 on same sheet

FOURTH QUARTER.—Begin the study of working drawings.

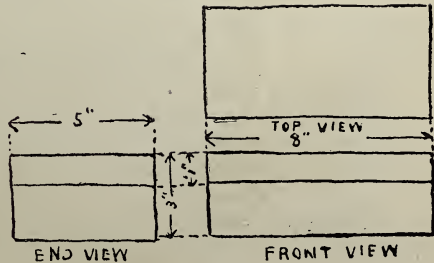
VISIBLE EDGE—FULL LINE

INVISIBLE EDGE—LONG DASH LINE

CENTER LINE

PROJECTING LINE

← 2 1/8" →
DIMENSION LINE



Working Drawings.

A working drawing is a drawing that enables the mechanic to make the object from the drawing. It tells all of the dimensions of the object, and shows its form so clearly that there can be no doubt about any part of its construction. In the sketch is a perspective picture which gives a general idea of the three dimensions of a box, but such a sketch does not give the facts you must know to make the box. If you wish to make a box you must know its actual height, width from left to right, and from front to back. The front view is obtained by looking directly at the front of the object; top view by looking directly at the top; the end views by looking directly at the ends, and the bottom view by looking directly at the bottom. In all of these views only part of the object is supposed to be placed directly opposite the eye. In a working drawing, the top view is placed above the front view. Make working drawing of chalk box, boy's sled, spool, drum, glass, etc.

Design Free-hand Lettering.

LETTERS FOR USE IN
SCHOOLS AYQGKMWZ ·
ABCDEFGHIJKLMN
OPQRSTUVWXYZ N
1234567890 & 1234567890-
ABCDEFGHIJKLMN OPQRSTUVWXYZ
Z *abcdefghijklmnopqrstuvwxyz 1910-12*
ABCDEFGHIJKLMN OPQRSTUVWXYZ

Picture Study for Grammar Grades.

Aurora, by Reni.
Oxen Going to Labor, by Trojan.
The Sower, by Millet.
Before the Storm, by Dupre.
Spring, by Corot.
Angelus, by Millet.

HANDWORK.

Handwork in the grades may be presented from two standpoints. It may be used to illustrate other subjects, as geography and history, by building small representations of the things described in books. Such representations are quickly made with more attention given to general effect than to accuracy of detail. The value of this sort of work depends on the problems which must be solved during the process of construction. For example; if a window $3\frac{1}{2}$ inches wide is to be placed in the middle of a 7-inch space, some very practical work in fractions becomes necessary in making the measurements. Some work of this sort is useful throughout the grades and is especially valuable in the lower grades. In the second place, hand work may be the study of certain processes, as carpentry or basketry, in which case the purpose is to master the process—to learn how to make the things well and special attention is given to accuracy. Special tools and equipment are generally needed as well as the services of a specially trained teacher. Work of this sort is valuable chiefly in the upper grades.

The suggestions which follow are intended to make use of the natural activity of the children by giving them something to do which they find intensely interesting, the execution of which requires constant and repeated use of what they are learning in numbers, language and art. In working out problems such as are here suggested, new situations constantly arise which tax the ingenuity of both teacher and pupils, and before a solution is reached much thinking to a definite purpose must be done; each child becomes more resourceful and, because the problem is fascinating and *worth while from his point of view*, he works without urging.

The value of the work depends upon the extent to which the teacher seizes every opportunity to clinch a bit of valuable truth. If, for example, in the instance above mentioned, the child is allowed to *guess* at the location of the window, little will be gained, while if he is required to use his ruler and *study it out* he will get more real practice in fractions than from a page of problems solved in a mechanical way. If, on the other hand, in the haste to see the project completed these opportunities are neglected, the work will degenerate into mere purposeless pastime.

The work here outlined may be carried on with little or no expense for either tools or material. Two sorts of problems are suggested. For the first, empty grocery boxes furnish the basis. The few tools necessary can generally be borrowed from the homes of the children, for a few days at a time, as needed.

The problems of the second group are planned for the sand table. The importance of a sand table in every school room, upper as well as lower grades, can scarcely be over estimated. As pictures make clearer the ideas gleaned from the printed page, so the making of the things described in the test still further deepens the impression and makes clear otherwise vague ideas. Sand table problems for the most part should be quickly made, used while the interest is keen and then destroyed to make room for new problems.

As a general topic the work of the first and second grades should be based on *home life*—our homes compared with the homes of other people. In the third and fourth grades study food and clothing, sources of materials, manufacture, how bought and sold. The upper grades will find interest in industrial life—various occupations and the difference between old and new methods.

The problems outlined may be used with profit in different grades, suiting the method and purpose to the age of the children. For example, the first grade might build a house for Three Bears, or the older girls might work out a careful study in house furnishing on the same general plan.

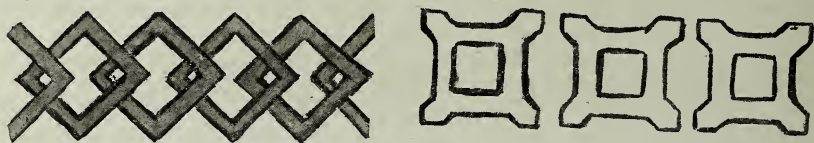
In the rural school of several grades one problem may be made to all by assigning the hard parts to the older pupils and the simple parts to the little ones. The corn field may furnish problems in percentage for one class, addition and subtraction for another.

Empty Box Problems.

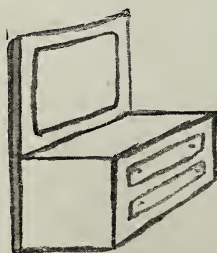
The Playhouse Purpose.—To use the child's activity in a natural way to help organize his ideas about familiar things; to lead from his interest in imitating life about him to a comparison with the life of other children, and to make the handwork a means of teaching other subjects.

Materials.—Several empty boxes, about 10 in. by 14 in., one for each room of the house. A few sheets of thin cover paper, plain wrapping paper or scraps of plain wall paper. A few pieces of thin pine or bass wood, thin, soft lumber from the covers of the boxes or empty chalk boxes. A little yarn or carpet rags to make rugs for floors. A little clay for modeling cooking utensils, etc.

Method.—Arrange boxes on table or shelf in convenient form for a house, open sides toward class. Decide, after general discussion and agreement, where doors and windows are needed. Measure and mark outlines on outside of box, bore holes in corners with auger and saw out with keyhole saw. Choose wall paper for rooms making best possible combinations in color. Make borders by cutting designs from another shade of paper. Simple designs based on the square may be repeated with good effect. For example:



Weave rugs for floors from yarn or carpet rags. String may be used for warp. Stretch warp across a box on nails driven in the ends if no better loom is at hand. Linoleum patterns may be drawn on paper for kitchen and bathroom floors. Make simple furniture. Thin wood nailed to thick blocks is best for small children. Scraps may be used and the ingenuity of the children brought into play to meet the needs of the case. Examples: A thin board nailed to a square block gives a good, substantial chair.



Similar construction for a dresser with tin foil for mirror. Make curtains from thin cloth or net, bedding from scraps of suitable material. When the furnishings are complete, a roof may be made of wood or pasteboard. If wood is used paste-board shingles may be tacked on in the proper way.

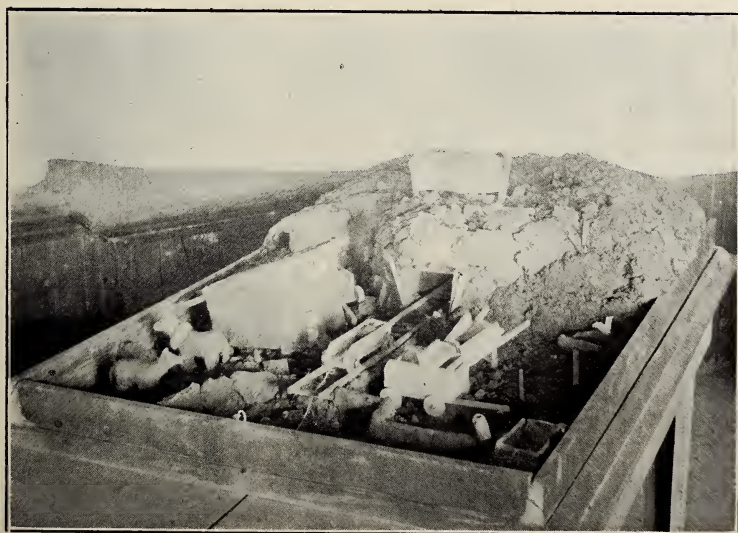
Application.—The value of the problem depends upon the lessons which are taught in connection with the work.

Language may be taught in the discussions necessary to an agreement as to arrangement of rooms, choice of wall paper and furniture, etc., in oral and written description of materials used and their source; in clear statements of processes.

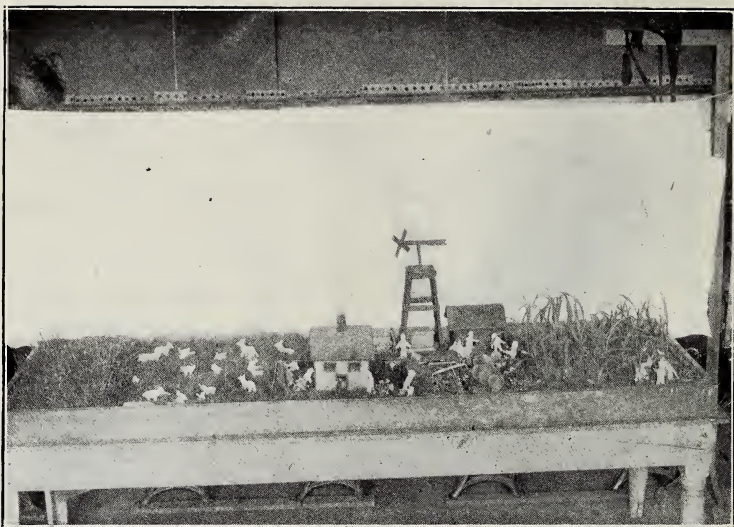
Numbers may be taught through measurements, problems as to probable cost of real things, estimates for materials as, wall paper, carpets, shingles, etc.



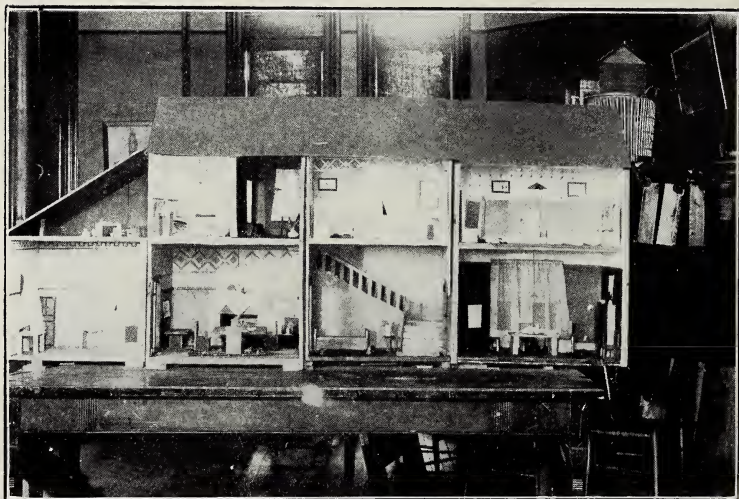
Pueblo Indian Home. Built by First and Second Grade Pupils. Lee School, Columbia.



A Coal Mine. Built by Fifth Grade Pupils. Benton School, Columbia.



A Farm. Made by First Grade Pupils. Jefferson School, Columbia, Mo.



A Home. Built by Class in Primary Handwork, M. S. U., 1910.

Art may be taught by cultivating good taste in arrangement, color and proportion, the making of borders and other needed designs.

Reading may be stimulated by building the house for some story-book inhabitants, as The Three Bears, The Overall Boys, or a family of foreigners. The actual process will suggest many applications not possible to classify here.

Stores—Purpose.—The construction in miniature of the stores commonly found on the village street may be used as a basis for a study of the common articles of food and clothing; where these things come from, what manufacturing process has been necessary to make them ready for use; their value and how they are bought and sold. The postoffice and fire department may be studied as examples of the advantages of cooperation.

Materials and Process.—An empty box for each store. Shelves and counters made from thin wood or pasteboard. Small quantities of *real* materials for stock where possible; otherwise the best imitation the children can make. Example: Paper cylinders for canned goods; fruit, vegetables, bread, cake, etc., modeled from clay and colored with crayon or water colors. Store front of pasteboard or thin wood, colored to represent bricks or boards, windows and doors cut out.

Application.—While the store is being made the various articles of *stock* may be studied as suggested above. When it is complete, class may *play store* with the contents, buying and selling, making change, writing bills, etc.

Language and Geography.—In study of materials, their source, manufacture, transportation, etc. Oral and written statements.

Reading.—To get information on above.

Arithmetic.—Measurement in construction of store, weights and measures used by merchants, problems using money, making of bills, profit and loss for older classes

Sand Table Problems.

The Sand Table.—Any table with a four-inch board fitted tightly around the edge to prevent the sand sifting through will serve the purpose. If a table is not to be had, a goods box may be turned on its side, the top covered with oilcloth and the frame, made from the cover of the box, fitted around the edge. The inside of the box may be used as a closet in which to store tools and materials and an attractive appearance given to the whole by a neat curtain around the box.

THE FARM.—Purpose.—To furnish a basis for the study of home life and incidentally to provide interesting material for number work, language, nature study, reading, etc.

Materials.—A sand table; small sticks; twigs; one wire; pasteboard for fences; thin boards for house, barn and other buildings; heavy green paper for trees; quantity of grass seed, corn, wheat, oats, etc.; clay for modeling cows, horses, hogs, etc.

Process.—Decide on size of farm and crops to be raised; kind and amount suitable to neighborhood. Divide sand table into fields measuring as accurately as the knowledge of the class permits. Pay attention to convenience in arrangement of fields, house, and barn lots. Build house, barn and other buildings of thin wood. Use chalk boxes or other available material. For orchard and shade trees use twigs from appropriate trees, or cut from heavy green paper. Model live stock from clay. Cut poultry from paper.

When buildings, etc., are about completed, sow seed in the fields as planned. Keep sand quite wet until seeds germinate, then moist enough to keep green. With careful management, the vegetation can be kept green for two or three weeks, giving opportunity for the study of different forms of the plants, effect of light, etc.

Application. Language.—In the necessary discussion before plans are agreed upon and in oral and written statements of facts gained by reading and observation, a diary may be kept as a record of the progress from day to day. Letters may be written to pupils in other schools describing the work being done. Cooperation between teachers in neighboring districts will make this a most valuable feature, the hand work

furnishing something to write about and actual exchange of ideas giving a motive for the writing.

Arithmetic.—Measuring of fields. Measuring of fence materials and estimating amounts required. Note how nearly estimates correspond to actual amount used. Measuring and estimating materials. Value of crops and live stock. Value of farmers time and cost of help. Cost of marketing crops. Amount of seed corn planted and percentage germinated.

Nature Study.—Observation to distinguish different kinds of seed. Method of germination of each. Effect of light, heat, moisture.

Art.—In connection with nature study, draw pictures of plants, showing progress in growth of roots, stalk and leaves from day to day. Make records in diary. Model various animals. Study tree forms for *cutting in paper*.

REPRESENTATION OF PIONEER LIFE—DANIEL BOONE.—*Purpose.*—To help the children appreciate the conditions under which the early settlers lived.

Method and Materials.—Near one end of the sand table build a ridge of rocks and sand to represent the Cumberland Mountains, leaving an opening for the Gap. Near the other end represent the Mississippi River by a trench in the sand, a piece of glass placed over the trench will give the appearance of water. The central part, at least half the table, may represent Kentucky with Missouri across the river and Virginia beyond the mountains. Show the advanced civilization of Virginia by well built houses. They will need to be quite small and may be made of pasteboard. Show Boone on horseback crossing the mountains toward Kentucky. Make figures in clay. Show early life in Kentucky by a log cabin in a clearing in the forest. Show Boone again with axe, felling trees. Show Indians watching him from behind trees and in other characteristic attitudes. A little farther west show Boonesborough. Log cabins in a stockade, stockade made of twigs, cabins of twigs, clay or pasteboard. Use material best suited to ability of the class. Show life within the stockade; women cooking, sewing, washing; children at play; men with guns and dogs going out to hunt. Show Boone's daughter being captured by the Indians. On the Missouri side of the river, show Boone's stone mansion, the judgment tree, and other phases of the more settled life.

Application.—*Reading and History.*—Story of Boone's life and service to country.

Language and art.—Story retold and written. Booklet made with appropriate cover design.

OTHER SAND TABLE PROBLEMS.—*Home Life.*—Eskimo village, tropical scene, Indian village, home life in foreign countries.

Illustrations for stories from readers, as:

Seven Little Sisters.

Ten Boys.

Robinson Crusoe.

Geography and History.—Maps of countries studied, showing land formations, vegetation, and home life and occupations.

Representations of historical events as,

Life of early settlers.

Life of Pilgrims in New England.

Lewis and Clark Expedition.

Building the first railroad to the coast.

Representations of various occupations as,

Coal and zinc mines.

Brick kiln.

Lumber camp and planing mill.

Blacksmith shop.

ELEMENTARY SCIENCE.

Nature Study.

Nature study has long since come into our best schools to stay. By nature study is meant such study of the common things in the environment of the child as will put him into sympathetic relation with them, and will enable him to use them in an educative development. Such a study will increase his scope of happiness by opening up to him a great world of interests, which presents a different phase with every change of season, and it will make him a more efficient member of his community.

Many teachers think they can do nothing with this work unless they have had a special course first. This is a mistake. The great world of nature is spread before us and we have only to look and to listen carefully and thoughtfully, and a little is revealed to us every day. That will furnish enough for you and the children to study together. Begin with those things for each season that you can best give (appropriate) but do not stop there. Keep moving on to something new or to a deeper experience. Don't be afraid to say, "I don't know—let us find out." Then let teacher and pupil plan the best way to observe and study the problem together. Bring materials into the school room when it is not possible to go to them.

Go to things first, then consult books and pictures for special explanations and special features not noticeable and clear. Follow this by many repeated observations as opportunity affords. Do this until you have an opportunity to take a course in Nature Study, and you will find that you and the children have a large and growing interest that is an educative one.

The work outlined for the first four years is full of suggestions as to materials that are easily available. There is more than enough suggested for each season. Select that which you can make most worth while. You will note that some large topics run through the four years, but a new and deeper phase is emphasized each season and each year.

The nature work and the primitive life stories have been planned to aid in a broadening of interests. These stories are being told at the language hour and some read at the reading hour. In them is much of nature for comparison with the child's interests. The primitive man was a child of nature.

Examples: In the Tree Dwellers—Bodo's food—clothing—use of fire—and weather conditions. Hiawatha's knowledge and love of birds, squirrels and other animal life; of corn, trees and other plant life; what Nokomis taught him of the stars, comets, rainbow, etc.

The first two years of nature work as outlined lays a natural foundation for geography which comes as a special subject the next year. The work in *hygiene* is one of the very important phases of work for these years.

Books and Aids for Teaching Nature Study.

*Nature Study—(Haltz).

*Practical Nature Study—(Coulter-Patterson).

(Each teacher should own one of these books.)

Study of Nature—(Schmucker).

Nature Study and the Child—(Scott).

Nature Study and Life—(Hodge).

How Nature Study Should be Taught—(Bigelow).

*The Gulick Series (for hygiene).

- *1. Good Health—especially useful for hygiene as outlined, and can be read by fourth year pupils.
- *2. Emergencies—every teacher should know how to meet emergencies. (Fifth or Sixth Year).
- *3. Town and City—shows even a young child how hygiene concerns the town. (Sixth Year).

Among Country Schools—(Kern).

Among School Gardens—(Green).

Type Lessons in Nature and Literature—(McGovern).

Send to Agricultural Department, Washington, D. C., for catalog of agricultural publications and farmers' bulletins. Select bulletins you wish and make them a part of the reference library.

Send to C. M. Parker, Taylorville, Ill., for a list of *penny* classics on agricultural and horticultural subjects. Get a complete or partial set of these for reference library.

Write the State Board of Health, Jefferson City, Mo., for circulars and bulletins on hygiene and sanitation.

Start a collection of nature pictures—birds, animals, trees, flowers, etc., for the library—mount pictures.

Consult library lists at back of State course.

Helpful books for children to use from school library—

Round the Year in Myth and Song.

Songs of Treetop and Meadow.

Eyes and No Eyes.

Nature in Verse (Lovejoy).

Our Birds and their Nestlings.

The Plant Baby and its Friends.

Wings and Stings.

Ten Common Trees.

Bird Guide (Birds East of Rockies).

From September to June.

Pathways in Nature and Literature, Bks. 1 and 2.

Our Feathered Friends.

Special to the Rural Teacher.

The Nature Study material as outlined will be of great help to the rural teacher, in that it furnishes many interesting topics for the beginning reading and geography work, and for the language each year.

The rural school child has unusual opportunity in his daily walks and at the noon hour to make observations and to collect material.

The problem in the mind of the rural teacher will be how and where to find a place for the work in the already full program. A study of the situation and a willingness to try will soon make it clear that a place can be found, and that instead of an extra burden it has added another source of rich material upon which to draw for many other school activities. A few suggestions will make clear the possibilities.

The work is so outlined that the teacher of a town graded school will find sufficient material for each season.

The rural teacher finds it necessary to teach several grades at the same time. All four grades or even more may work upon a single topic. Birds are given for study each year. The first and second year children will be interested in learning to know them by their colors, markings and notes. They will watch their habits in getting about on the ground, their flight and their activities in nest build-

ing. The children of the next two years (3-4) beside these points, are interested in a study of certain ones in a more intensive way—the robin—the English sparrow—the meadow lark (see outline). They will want to know more of their feeding habits—the kind of food—reasons for migration—their economic value—why and how we may protect them. In tree study there are general phases that interest all. Little children may collect colored leaves in the fall and the older ones make a collection of wood. The collecting instinct is strong in the third and fourth years. Economic phases of all subjects will begin to interest the older children. What trees are good for shade trees for our school yards, and for our lawns? How may we protect our shade trees? Our fruit trees? What insects are injurious to our trees? To our gardens? How may we get rid of the codling moth? Of the potato beetle and of other injurious insects? Read the introduction to the work for the different years.

Much nature work may be given in a short period of ten minutes after dinner or after recess when the children have had an opportunity to make observations or to bring in material. A longer period may be arranged for twice a week. Much may be done in a little while if the work is planned by the teacher and kept before the children by inspiring questions from day to day. Have a flexible program, so that on certain days after the nature study period you have the reading period, in which you read nature stories and poems, followed by a language period in which some nature topic becomes the subject of written work. Such a plan makes it possible for half the school or the whole school to be at work on the same subject at one time, but on different phases of it. This saves much time in the day's program. Older pupils may be given different topics to investigate more fully, and then give reports at stated periods.

Hygiene topics may also be treated in such a way that they are of vital concern to all the children in one group. The work for the first two years in the outline is such as needs to be often brought to the attention of all. The other topics afford phases for children of varying ages and experience.

NOTE.—School gardens are growing in favor and usefulness every year, both in town and rural communities. They furnish an excellent centre for the study of various phases of plant and insect life.

School gardens are of so many kinds and have been demonstrated to be valuable under so many conditions that it is quite clear that *any school may have one*. Mr. Kern says that the way to have one is to start one. Every school may begin with a corner of the school yard or a strip along the fence, or by beautifying the school grounds in general. Many schools can have a large enough space for class gardens and individual plots.

Read about school gardens and how to make them. The Agricultural Department at Washington sends out an excellent bulletin on School Gardens and sends enough seeds for your whole school free of charge. The two books in reference list marked give chapters on School Gardens. Start a shelf of literature on school gardens in the library, start a garden and learn something new each year.

Helpful Books and Bulletins.

Bailey—Garden Making.

Hemenway—How to Make a School Garden.

Parsons—Children's Gardens for Pleasure, Health and Education.

Weed and Emerson—School Garden Book.

Greene Among School Gardens (Russell Sage Foundation).

Kern—Among Country Schools.

Agricultural Bulletins, No. 5, 28, 54, 111, 134, 141, 196, 218, 229, 255, 257, 266.

Class D.—First Year.

The work should be closely connected with the foundation work for industrial history, geography and literature.

(1) Little children are interested chiefly in *activities*, especially those in which they may participate. (2) They are interested in *whole objects*, not in parts; (3) in large things rather than small ones; (4) in beauty and use that are directly apparent rather than in the less attractive and in objects that seem to be of no service.

Little children come to school with an excellent foundation upon which to build. They are acquainted with the activities of members of their homes, as noted in (1) keeping the home in order, (2) providing for the needs of the household, (3) they know the animals about the home, and perhaps a few of the (4) plants in the yard and garden.

In the light of what they know, it is a natural procedure to begin their nature study with noting how nature contributes towards their needs and the needs of the family. This brings about a visit to their gardens (home or school) with a simple study of vegetables, of fruit and grains used for food, of methods of storing and preserving these. This leads to a study of animals as they take a part in the preparation of food and as they prepare for winter. This calls for much *self-activity* on the part of the children in gathering and storing of vegetables, fruits and seeds, and in planting seeds. At the same time it provides for that unity of school and home life for which we are striving.

FALL. *Home occupations.* Food supply. Clothing. Shelter. How and where do we get them. Father's work of provision—Mother's work of care and preparation, and children's part in it. Child's condition, if left to provide his own needs. What he would use in primitive conditions and how he would get them. (Call up nature phases in primitive life they are having).

Visits to garden (home or school) and to a farm. Make note of all the products and of work of gathering and storing of vegetables, fruit, grain and seed. In the school garden let the children take part in the activity. Let them report part they take in it at home.

Collections. All kinds of seeds and seed pods (nuts, milk weed pods, peppers, tree pods, cones, etc.) Collection of vegetables and fruits, "a harvest display" at Thanksgiving time. Landscape, sky, haze, foliage, ground. Collections of colored leaves.

Weather studies, seasonal changes, effects on the landscape, coloring of leaves, the grass, the haze. Effect of frost on garden vegetation, on trees, on animals. Just notice the change—no explanations. Our clothing to meet changes in weather. Migrations and hibernations. Compare early fall bird and insect lists with those of November. Which birds and insects do you no longer see? Where are they?

Birds. Encourage children to talk of those they know. Learn to know others as they see them in their gardens, yards and in their walks and excursions. (1) Crow, (2) bluejay, (3) robin, (4) blackbirds, woodpeckers, (5) redhead, (6) flicker, (7) cardinal, (8) mockingbird, English sparrow, are all noticeable the first of September. In a few weeks note which are no longer seen. What ones remain? Do you see just one or two or several of a kind? Study the *turkey* at Thanksgiving.

Insects. In the gardens and fields observe the butterflies and moths. Observe caterpillars on milk weed, cabbage and on trees. Tell them of the cocoon stage and have them find cocoons in sheltered places on fences, houses and bark of trees. Milkweed and cabbage caterpillars, if brought into the room first of September, and kept in boxes or cages with leaves of milkweed and cabbage, may spin their cocoons.

and emerge as butterflies in a week or two. Later they will not emerge until next spring.

Observe the outdoor habits of the cricket, grasshopper, fly and spider. How late do you see them about? Where do they go?

Domestic animals. Let children tell of their pets (cat, dog, horse, cow, pig, chicken). Show pictures of these, and of the wild relatives of the cat and dog. Stories of animals. (A language correlation).

Trees. Most common ones, oak, maple, elm, fruit trees, an evergreen and others. Study for identification, by general shape, by leaves and fall coloring. Changes in trees due to seasons, leaf color and fruit.

Flowers. Learn the names of the commoner kinds of flowers in the home and school garden. Collect and arrange in bouquets. Study artistic ways to arrange flowers—beauty of long stem. Take up certain plants to bring into schoolroom before frost.

Wild flowers. Gather autumn sunflowers, asters, daisies, goldenrod, dandelion. Learn their common names. Notice them going to seed and gather for display. Notice the seeds of the dandelion, milkweed and thistle sail away on the wind. Plant tulip and hyacinth bulbs for outdoor blooming in spring, and in pots for winter blooming.

WINTER. (Suggested excursions, cellar, dairy, meat market.)

Foods. Kinds of foods stored away in our cellars, how protected? Effects of freezing on vegetables and fruits.

Dairy products. Milk, butter, cheese; how are these products brought to us? Simple study of how milk and butter are prepared for the market.

Animals. The cow. What else does she furnish for us? (Meat, leather.)

What meat do you know that comes from the cow? Leather—what it is. What do we have that is made of cowhide? Let children tell about the cow at home. What kind? How tell what kind? Her habits (as they see them). Her care. What and when does she eat? Does she gather her food herself, or is it prepared for her? For how many people does she furnish work. (For us, if we keep one; for the farmer, the dairyman, the milkman, the butcher, etc.). Rabbit. Some child may have a pet rabbit of which he can tell. School conditions may be such that it can be kept there for a few days. Habits, care (from observation). Examine fur garments of children. What kinds of fur are represented. Observe sheep if possible. Show wool on hide, shorn wool, spun and woven and dyed.

Clothing. Changes we make for winter. Warmth of furs and woolen clothing. (Compare clothing of primitives).

Shelter. Our homes. Heating of our houses. Emphasis on fuel (not on methods of heating). Kinds of fuel used in our homes, how stored? Where does it come from? Material of which our houses are made. (Compare primitives). Lighting, in what different ways lighted? (Candles, lamps, gas, electric lights). Water, where does the water for your home come from? Difference between well and cistern water.

Birds. See fall list. Are they all here now? What birds do you see daily? By mounted pictures teach them how to recognize those birds that stay during the winter. Throw out crumbs from dinners and lunches for the birds. Fasten suet to the nearby trees, and watch the birds as they come to eat. Stories and talks of birds which lead to observation of their ways and to right feeling about them.

Fish. If schoolroom temperature at night and over week end will admit of it, keep a bowl or an aquarium of gold fish. (Do not keep in the bright sunshine and see that they are well cared for). Let the children watch their beauty and grace and see them feeding. Notice their shape and ease in moving through the water.

Plants. Some attention to potted plants if the room temperature permits keeping them. Observe general shape of the oak, elm and other trees the children have learned to know with their leaves on. How can you identify them without their leaves? As Christmas approaches study the evergreens. How are they different from other trees? Collect cones and twigs.

Weather study. Changes in the landscape; snow storms, snow scenes, bare trees, gray sky, cold weather.

Hygiene. How the cow, horse, dog, squirrel and birds keep warm in winter. The animals' thickened coat. (Our winter clothing). How we may keep well during the winter. (1) Warm clothing; (2) dry clothing (danger of damp ones); (3) cleanliness of face, hands, hair, teeth, nails; soap, water and individual towels in public places; (4) drinking; Water and milk good for children (vs. tea or coffee). Drink but little while eating. Individual drinking cups the only safe cups. (5) Use of door mat and shoe brush (not good to carry dust into room to breathe. (6) Feet off couches and pillows, etc. (7) Individual pencils and books. (8) Position in sitting, standing.

SPRING. Spring weather. Greater warmth, melting snow and ice, the March wind, clouds, rain, the brook, field lessons.

1. What does the wind do for us? (Stevenson's poem of "The Wind").

2. What is rain good for?

3. Where does the water in the brook come from? See how swiftly it carries things along, chips, toy boats. Find some quiet pools in it, some falls, some round pebbles. Notice the awakening of plant and animal life.

Birds. Identify the newcomers as they return. Keep a list of them as the children report them from day to day. Keep bird pictures at hand to learn special markings. List: Robin, bluebird, meadowlark, red-winged blackbird, cardinal, mockingbird, thrasher, catbird, song sparrow, gold finch, and any others that children see in their locality. Watch the nest-building process; put hair, small bits of string and feathers in convenient places for the birds. Report on bird habits. What else can we do to help the birds?

Let children report concerning little chickens at home. Observe parental care of the old hen. Let children tell different kinds of chickens they have. What does the hen give us? (Eggs, meat, feathers).

Frogs. Listen for frogs. Take children to a pond where there are frogs' eggs. Collect and place a few in a jar, with green plant life to take into the school room. Watch them hatch and develop. (Change water about twice per week).

Earthworms. As soon as the frost is gone, notice the earthworms (fishworms). Where have they come from?

Insects. Visit a beehive and watch the bees at work. Watch them closely as they are busy in the flowers. Tell the children of the social life of the bee—the queen, the drones and the workers, division of labor among the workers. Tell of different kinds of work that need to be done in a hive.

Ants. Observe an ant-hill; notice the numbers; what different things do they seem to be doing?

Landscape. Notice the changes due to green grass and budding trees.

Trees and shrubs. Bring in twigs and pussy willow, horse-chestnut, lilac and maple. Notice the buds when brought in and watch the changes. Do trees have flowers? Watch the maple, lilac, oak, willow, apple, plum and cherry. Teach them that fruit and seeds come from the flower. Watch a fruit tree from budding to harvest time (Cherry is a good one).

Gardening. 1. Make window boxes, prepare soil and plant corn, lima beans, peas, nasturtium seeds, morning glory seeds; watch them come up. Water some and not others. What difference noted?

2. Make a simple germinator—jelly glass—blotter coiled inside—sand inside glass. Plant seeds between glass and blotter; keep sand moist (not standing water). Watch how the seed swells, bursts and the little plant comes out.

School garden (outdoors). See part for little children under paragraph on school gardens.

Class D.—Second Year.

The work of the first year has brought many interesting things to the attention of the child. The idea has been to have him feel "The world is so full of a number of things" and that

"Whether we look or whether we listen,
We hear life murmur or see it glisten."

In the second year all of the same features will be called up again and new ones added. Beside giving many interests there should be a deeper experience with certain phases of nature.

FALL. Call up the fall activities at home and in the animal and plant world to get ready for winter. (See first year). First and second year pupils are usually combined for this work.

Gather seeds, colored leaves, grains, grasses, and prepare for a large harvest display at Thanksgiving time. Bring in fruit, nuts and vegetables. Make use of materials in school garden. (The food products may be used to make a more cheerful Thanksgiving season for several families). Jellies, canned goods and bread may be added to the collection. (Emphasize the work of father, mother and children in collection and preparation. Division of labor).

Weather studies. Seasonal changes in temperature (Note effect). Learn to read thermometer. Keep weather chart for short intervals, recording temperature, wind direction, cloudiness, rain and sunshine. Teach how to tell wind direction, nature of clouds, etc. What does an east wind indicate? A north wind?

Animal life—Birds—Migration. As last year, we find a number of our birds leaving us. Where do they go? Tell of their long flights to Central America, to South America, etc. What they will do there. The robin and bobolink in our southland. Name those birds that migrate. (Those they know and see no longer).

Insects (See first year). More careful observation and study of characteristics and habits of butterflies, moths. Watch life history, from the voracious caterpillar to the quiet pupa state and finally into the beautiful butterfly or moth climax.

The grasshopper. What does he eat? Notice his jaws, his head, chest, abdomen with rings, legs, wings. Jumping and flying.

Observe beetles, crickets, honey bees, bumble bees, wasps, spiders, etc.

Mammals. The dog—Let children tell of the kinds of dogs they have as pets. The following points are suggested as an outline for the study of any creature.

1. How does it care for itself?
 - a. Its food.
 - b. Locomotion.
 - c. How it protects itself, its enemies, its dangers.
2. How does it care for its young?
3. How shall we care for it?

Observe these in the study of the dog and cat. Compare dog and cat as to friendship, faithfulness, usefulness. Good stories of cats and dogs. Pictures of their wild relatives. How tell they are relatives?

Plants, Garden. Observe the work of weeds and insects in the garden. Gather seeds from the school garden, label and put away for spring sowing.

Grains. Learn to recognize different kinds of grain and their uses. Uses of straw. The story of a loaf of bread.

Fruits. Study fruits brought for exhibits, also any others gotten at fruit store. Notice the edible portion of each and the pits and seeds. Notice the beauty, fragrance, flavor and sweetness of the different kinds.

Trees. Learn several new ones. Note leaf shapes and differences in coloring (red and yellow, in maples) (deep red and brown in oaks). Notice the buds ready for winter.

Flowers. See work of first year. More intimate acquaintance with the wild flowers of your locality. Which ones are called weeds? Why?

WINTER. *Animals.* (See outline for study of a creature.)

Sheep. Relation to man. Stories of processes connected with wool, shearing, spinning, weaving, clothing. The dog in relation to sheep. The wolf in relation to sheep.

Birds. Keep list on board of all those still here. (How many of these do you see? English sparrow, crow, flicker, blue jay, cardinal, hawks, owls, doves, downy woodpecker, snow birds.) What can you find out about owls—their homes, food, bills.

Plant life. Deeper experience with the work of the first year in tree study. Bring in some twigs of willow, lilac and plum to see if you can wake them up.

Hygiene. Some important matters of hygiene that should receive careful attention.

Teach the Children.

1. Not to spit; it is rarely necessary. To spit on a slate, floor, or sidewalk is an abomination.

2. Not to put the fingers into the mouth.

3. Not to pick the nose.

4. Not to wet the finger with saliva in turning the leaves of a book.

5. Not to put pencils into the mouth or moisten them with the lips.

6. Not to put money into the mouth.

7. Not to put anything into the mouth except food and drink.

8. Not to swap apple cores, candy, gum, half-eaten food, whistles or bean blowers, or anything that is habitually put in the mouth.

9. Teach the children to wash the hands and face often. See that they keep them clean. If a child is coming down with a communicable disease it is reasonable to believe that there is less chance of infecting persons and things if the hands and face are washed clean and not daubed with the secretions of the nose and mouth.

10. Teach the children to turn the face aside when coughing and sneezing, if they are facing another person.

11. Children should be taught that their bodies are their own private possessions, that personal cleanliness is a duty, that the mouth is for eating and speaking and should not be used as a pocket, and the lips should not take the place of fingers.

(Board of Health, Providence.)

Emphasize hygiene matters previously treated as often as will make them effective.

Weather. Continue weather chart for one month at least. Notice forms of snow flakes on black cloth or on children's dark clothes.

SPRING. Note landscape changes, return of the birds and all evidences of awakening. (See first year.)

Birds. Watch for last year's friends. Learn to know them better by both color markings and by note. Listen for the song of the mocking bird, the thrasher and the catbird and for the whistle of the cardinal. Study the robin carefully. The following points are suggestive for study of any bird: Size, color, bill (color,

size, shape), feet, gait (hop, walk), tail, feeding habits, flight habits, nest building. Have a "Bird Day" program.

Frogs. Repeat work of first year.

Bees and Ants. Continue acquaintance begun during first year. Catch a bumble bee and keep for a few hours only under a tumbler for observation. If you get a large one with white markings on the face you have a male. He cannot sting, for he has no stinger.

Trees and Shrubs. Repeat observations of first year. Which ones have flowers? Which come first—flowers or leaves? Watch.

Wild flowers. Notice whole plants. The root, the stem, the leaves. What is each for? What insects besides bees do you find about flowers? Why are they there? Start a corner of wild flowers in the school yard. Dig up and transplant violets, ferns, Jack-in-pulpit, spring beauties, wind flowers and others. Plan for "Arbor Day" to plant trees, shrubs, flowers. Special program. May be combined with "Bird Day." Continue germination work of first year. Notice parts of little plant from day to day.

Gardening. See paragraph on gardening.

Class B.—Third Year, 1911-12.

The method of work is not decidedly different from that of the first two years. The appreciation of variety and beauty is still prominent but use or economic features make a greater appeal now. For the next two years the collecting instinct is strong. Make collections. Closer thinking may be done and excellent work in correlation and comparison should be done.

FALL. Harvest Festival. Begin collection of leaves, seeds, grasses, grains, nuts, fruits, vegetables, etc., early and continue up to time of display. (See first two years). This should be a feature for every year with variations. Have a harvest program. Comparisons: What food products did Hiawatha have? The Eskimo children? Bodo in Tree Dwellers? The various "Seven Little Sisters" as they are taken up for study. Which ones have food similar to ours? Very different?

Seed study. Notice seeds collected. In what ways are they scattered? (Stick to clothes, to furs of animals; wind blows them; they snap or shake out; birds carry them, etc.). Which seeds in your collection are weed seeds? (What weeds do you know?)

Animals. What domestic animals are kept in this vicinity? (What wild animals are found in your neighborhood?) Comparison: What animals did Hiawatha, Bodo, Robinson Crusoe and the Seven Little Sisters know? Which people kept domestic animals? What animals did they tame? Why? (Skins, leather, meat, milk, beasts of burden, etc.).

Birds. Careful study of the English sparrow. (See previous outline). Called "House Sparrow" in Europe. Why? Some one said he is a "weed" in bird life. Why?

Other birds for special study. Crow, red-headed woodpecker.

Insects. Review life history observations of butterflies. (See first two years). Send to Division of Entomology, Department of Agriculture, Washington, D. C., for eggs and cocoons of silk worm. Comparison. Read or tell of Pense and her silk worms (Seven Little Sisters).

Weather Studies. Weather charts. Develop idea of climate—cold, hot, dry, moist. Comparison: Climates of other lands.

Gardening. Get the school garden into order and make use of its materials. Start a corner of fall wild flowers, asters, golden rod, daisies.

WINTER. Animals. What fur bearing animals have you seen? Compare fur

with hair and wool. Why do people wear furs? Comparison: Primitive peoples (Indians, Eskimos).

Birds. Provide for your little winter friends. Notice the snow birds.

Plant life—Trees—See previous years.

Start a collection of woods of your vicinity. Pieces 4 in. long, $\frac{1}{2}$ in. to 1 in. in diameter. In February grow plants in vessels of water—onion, carrot, sweet potato, wandering Jew. Chinese lilies.

Hygiene. Fresh air. How can you tell whether the air in a room is pure or impure? How do we get fresh air into this room. How wide open should the windows be? If the door is opened into the hall what else should be done to get fresh air? (See that the hall gets fresh air from some source). How can you tell when there is a draft in the room? Why is a draft dangerous? How can you open windows so that there will be no draft? (Open at top, or one at top and another at bottom). How do you plan for fresh air in your sleeping room?

Eating and Drinking.

1. What to eat—milk and eggs, fresh meat, cereals, bread, vegetables and fruits. Time of year makes a difference. Winter—more butter and fat to keep us warm. Summer—more vegetables and fruit and less meat. A little candy is good for most people, if eaten only at mealtime.

2. When to eat, regularly—three times per day. Do not eat between meals. People not strong should eat less but oftener.

3. How to eat (Slowly). Chew well. Never drink while chewing.

4. How much. Until you stop feeling hungry. Never eat until you feel stuffed. "A boy who works and plays and studies hard needs more than his mother who reads and sews all day in a warm room."

Drinking. Water and milk (vs. tea and coffee) Temperance in all eating and drinking. (Call up previous hygiene facts).

SPRING.. *Spring signs.* Keep birds and flower calendars to note the first appearance of these harbingers of spring. Compare with a list of the previous year to note difference in time and to note how many new ones have been added. Why do some birds come early and others late? (Difference in the nature of their food). Find out what they eat. How the birds help the farmer, gardner and fruit raiser by eating insects. (Some simple arithmetic problems to see how many insects one bird eats in a week, a month, a season. A dozen birds). Special study of meadow lark and flicker or yellow hammers. (See previous outline).

Insects in the spring flowers. Notice the cut-worms in the garden. Dig up grub-worms. They will develop into June beetles. Tell of their development. Frog, toads. What difference? Continue observation of frog eggs, tadpoles and frogs.

Flowers. Calendar of spring flowers. Learn the parts of the flower as they come up in the examination of them. (Petals, corolla; sepals; calyx; stamens; pistils). Notice the yellow pollen grains.

Competitive Flower raising. If school is in session until last of May plan for contest in May with petunias, nasturtiums or other rapid growing flowers. Plant seeds in boxes last of February or first of March. Transplant to pots and cans and let children care for them at home and bring to school for contest. Talks about care of plants. If school closes early, start cosmos and salvia in same way and care for at home until time for "Harvest Festival" of next fall. Send to Agricultural Department for seeds.

Trees. Bring in twigs to force and note trees outside.

Gardening—(See Gardening paragraph).

Class B.—Fourth Year—1912-13.

FALL. See third year. The work of these years may be alternated.

The usual preparations for the "Harvest Festival." This should be the best one yet given. Let it include an exhibit of corn, preserved fruit, jellies, bread. Make the arrangement and labeling of collections and the nature of the program as educative as possible. Study of various ways in which fruits are stored. Canning, preserving, pickling, drying, candying.

Plants. Put garden in order. List of all weeds and their ways of doing harm. Lists of injurious insects found in the gardens.

Flowers. The sunflower. Notice them growing, the great size, broad leaves, and the turning of the head toward the sun. Bring head into the room for study. Notice the hundreds of single flowers in one head—tubular ones in the center and ray flowers on the border. Note the numerous seeds which are really fruits. (Roasted and eaten in some countries as we do pop corn). Fed to chickens in this country. Notice that asters and daisies are also composite flowers. Competitive flower raising. (Report as to growth of flowers for contest from time to time until Exhibit).

Trees. Renew acquaintances of former years. Study uses of trees. From what sorts of wood are our houses built—finishings—furniture. Which woods are hardwood? Soft wood? In what parts of Missouri are our forests? Collections of woods. Which trees are useful and ornamental as shade trees? (Forest preservations.) Same sort of study as to shrubs and vines for decoration. Comparison: Uses of trees in lives of primitive people. (No trees in Agoonack's land. Hiawatha's use of the birch and others. Bodo's home in the trees, etc.)

Animals. Review domestication of animals. What changes has it made since primitive days? What domestic animals are raised in numbers in your community? Why? What varieties of chickens, hogs, cattle, sheep and horses do you know about?

Special study of the horse. Care of the horse. Laws protecting the horse. (Read parts of Black Beauty.) The mule as a burden bearer. The burden bearers of other countries.

Birds. Study of game birds. What game birds are seen in Missouri? Why do people hunt them? When? How are they protected by laws? Habits of Quail.

Insects. What are the different stages of life for moths? (Egg—caterpillar—pupa or quiet stage—moth.) When do they do their harm? (Caterpillar.) How protect plants upon which they feed? (Spraying.) Study of codling moth—in-jurious to apple crop of Missouri.

Studies of mosquito and house fly—both disease breeders.

WINTER. *Soil Study.* What is soil? What kinds do you know about? (loam-sand, clay, etc.) How is soil made? (Tell of work of frost, freezing water, flowing water, decaying plants, work of earth worms.)

Study of snow. Note its beauty in falling flakes, in crystals on dark background, in mass over field and woods.

Its uses—furnishes protection to the plant life in the earth, furnishes moisture, purifies the air.

Animals. Poultry. What is being done in your homes in raising poultry and doves? What do we get from poultry? Care of poultry—house—nests—food—drink—cleanliness. Does it pay to raise poultry? (An arithmetic correlation.) Work out actual problems brought from home experiences. Poultry catalogues.

Birds. Encourage the winter birds. Put out sunflower heads for them, sheaves of grain, crumbs, and tie suet to the trees.

Trees. Bring in winter buds. Note the different ways in which they are protected.

Hygiene. 1. In what ways do we get pleasure from things about us? (The senses—by seeing, hearing, touching, tasting, smelling). What pleasures do our eyes give us? Let children name many—(see our friends, see pictures, see beauties of nature, make it possible to read good books, etc.). Are there people who do not have all these pleasures? (The aged, the blind, those suffering from defects of the eye). Are these pleasures worth having? How may we plan to keep them? Work out with children ways of keeping our eyes clear and strong. Why is it best to have the light fall over the left shoulder on the page? What objection to having it in front? Behind? On the right? Why should blackboards be opposite windows and not between them? (What can the teacher and directors do to have right conditions in the room?) What kind of print is easy to read? (Size and spacing). What difference between near-sighted and far-sighted? How can you find out whether your eyes are alike? (Make this work very practical by working for eye tests and by having correct lighting).

2. Exercise. 3. Sleep. Work out each of these topics in the same practical way that the preceding topic is worked out. *All hygiene topics should make for right living both in the school and home.* Study the possibilities of games in the schoolroom and on the playground.

SPRING. Rain. Trace a rain drop from the earth to the clouds and back as a raindrop. Uses of rain. The brook.

Flowers. Plan for an afternoon in the woods. Bring home plants to add to the wild flower corner.

Birds. Watch for their return. Which ones come first? What birds do you see most often on the ground? High in trees? On the wing? Near water? On the side of trees? Which ones hop? run? walk? wade? climb? perch?

Notice the warblers (latter part of April and first of May). Note the bright color (usually some yellow), the little twittering notes and the quick nervous flittings from branch to branch.

Make a special study of the gold finch. (Called also lettuce or thistle bird).

Watch for the summer yellow bird, the blue bird (or blue robin). Which comes earliest?

Bird and Arbor Day exercises to show value of the birds to us. Bird laws. What are we doing to protect them?

Gardening. Children of this year and older children may spade the garden and do the preparing of the soil. A larger garden will be ploughed. All may study seed catalogs and aid in selecting the flowers and vegetables. Let all plan for the garden. Some co-operative work—some individual work. Plan so that children of all ages have an educative part in the work. The nature lessons on soil study; seed selection, testing, germinating, fertilization and care come before and at the same time garden processes are in operation. The growing plants and the insect life of the garden furnish more lessons.

Class B.—Fifth Year, 1911-12.

The teacher should at this point read over the general suggestions given in the introduction to the nature study course. He should use during this year the outlines for the first four grades. The same sort of work should be continued during the fifth year. Since much of the work suggested in the first four grades can be continued in the fifth the outlines for this year will be made brief. The fifth year nature study should be given in 1911-12 and should alternate with the sixth grade physiology.

FIRST QUARTER. Weeds. Study ten common weeds found in the locality of the school. Dig up and wash so as to show roots. Study the use of roots. Study the stems, the length, the joints. Notice whether they are solid or hollow. No-

tice the color and whether or not they are rough or smooth. Study the use. Get children to make a list of stems used for feed for animals and food for man.

Next study the leaves; their shape, whether rough or smooth. Compare the upper surface with the lower and notice the edges and veins. Study their use.

Pupils should record their observations in note books. Make drawings to illustrate what has been observed. Insist on good English and neat work.

Plants used for medicine. Make a collection of burdock, dandelion, pokeweed, mullein, tansy, hoarhound, catnip, jimson-weed, and mustard. Study these as other weeds were studied. How is each used in medicine?

Experiment: To Show the Effect of Sunlight on Plants.

1. Put box over plant or plot of grass. Let it remain one week. Note the difference in color.
2. Cover a young corn plant, bean plant, or other young plant with a box or can, and note the same result. What causes it?

Poisonous Plants. Study as before. Among this list teacher will study the wild cherry, poison ivy, buckeye, jimson-weed, and bitter-sweet. Get children to understand what are annuals, biennials, perennials, and be able to give an example of each.

In what ways are the five worst weeds of your district spread from field to field, or farm to farm? What is the best way to fight each of these weeds?

Experiment. Fill a glass nearly full of water. Cover with paste board. Punch a hole in the cover through which put a stem of some growing plant, letting it dip into the water. Put another plant of the same kind into a dry glass. Notice the difference and get children to account for it. Get children to name the things that are necessary for plant growth.

Study of Flowers. Begin with some five-leafed flower and study the following: Sepals, petals, calyx, corolla, stamens, anthers, and pistil. Have pupils draw illustrations of each of these parts. Make a lesson in spelling containing these and other words—root, stem, leaves, flower, sepal, petal, calyx, corolla, stamens, anthers, pistil, pollen, annuals, biennials, veins, and the names of the plants studied.

Composition. Write a description of some plant studied, where found, kind of roots, height, stem leaves, flower and so on.

Experiment. Weigh a bundle of clover. Put away in a dry place for two weeks and weigh again. Account for the loss.

Insects. What do they injure? In what way? Study feeding habits. Collect, feed and develop larvae of moths and butterflies, till they enter the pupa stage, then put them in a box and set them away till spring. What insects are beneficial to man?

Seeds. Collect fifty or more seeds of every farm crop grown in the neighborhood and seeds of the five worst weeds. Collect, also, a number of grasses and save for winter study. Also get some unthreshed wheat and oats for winter study. Often bunches of volunteer oats are found growing along the roadside; collect before ripening and keep for second quarter study.

Plant several bean seeds in a box of moist earth, planting the seeds at different depths. Keep records of the time required to send the sprout up to the light from seeds at each respective depth, and also of the subsequent vigor of the young plants as shown by the color, rate of growth, etc. From these results, what seems to you to be the best depth to plant beans? Try the same experiment with seeds of other plants. Record results and give your conclusions.

Animals. Observe horses and cattle at pasture. How do they move their heads in biting off the grass? Why do not horses bite it off in the same way that the cattle do? Which can bite the grass shorter? Examine the front teeth of a horse and of a cow. Write descriptions.

See suggestions in previous grades for a Harvest Festival.

SECOND QUARTER. Seeds. Study the seeds collected the first quarter. Study first the *scattering* of seeds. Some are scattered by the wind, some by sticking to the hair of animals, some are carried by birds, some washed by water, and some carried by animals and stored away as food. Let children give an example of each. Study *purity* of seed. Take a handful of wheat and divide into two parts: In one place the rotten grains, broken grains, weed seed, chaff and dirt; in the other place the whole, sound grains.

Secure some samples of poor wheat or oats. Estimate the part of pure seed. Find which is cheapest, good wheat at \$1.00 per bushel, or cheap wheat at 80c; good oats at 40c, or cheap oats at 30c.

Put the seeds before the pupils so that labels cannot be seen, and let them give the names of them.

Seed Testing. This can be carried on in different ways. A box filled with sand, or a pan or a plate with a piece of heavy cloth will answer the purpose. The main object is to keep account of the number of seeds planted and the number that sprout.

In some schools this work is carried on during all the winter months. The testing boxes or plates are prepared in school and then taken to the homes of some of the pupils until the seeds germinate. In some schools all the garden and field seeds planted in the community are tested and written reports made of the same. This is an excellent work for the school to undertake.

Soak some large seeds, such as bean, corn, pumpkin, etc., and notice the seed coat. Sprout some of them and notice the divisions. What becomes of the thickened part of the seed after germination?

Select a young tree for study. Carefully examine all of the branches. Note by marks on the twigs the amount of growth each branch has made during the season. What is the greatest length in inches of the year's growth? Does the rate of growth vary on the different parts of the tree? Explain.

Make a list of all the kinds of trees you can find growing in your district. Make drawings showing the typical shape of each kind. Make drawings of leaves of each kind. Contrast evergreen and deciduous trees.

Continue work begun in the third and fourth years. Recognition of the different kinds of leather, cloth, metal, etc.; source, qualities, uses, and prices of each.

The floor; carpets, rugs; care of floors; dangers from dust and treatment of dust.

Study the familiar fish of the neighborhood; structure of the fish; methods of catching; fish culture.

Third Quarter. This is the time to lay plans for the spring garden. Plan for contests among pupils in flower raising, and gardening. Corn growing contests for the older pupils.

Soil study. Make a collection of the different kinds of soil found in the community. What vegetation is found on each kind? Examine the texture of the different kinds of soil. Study the movement of water in soils.

Experiment. Put one end of a towel or cloth in a pan of water and fasten the other above it. Notice that the water creeps up the towel. This is due to capillary attraction.

Experiment. Take two lamp chimneys; tie a cloth over one end of each. Fill one with sand, the other with finely powdered loam, and set each in a pan of water. In which does the water rise quickest? Why? In which does it rise highest? Draw conclusions. Put a pile of sand in a plate and pour water around it. Notice how the water rises; what causes it?

Continue the work of seed testing begun previously. Animals. (See suggestions for third and fourth years).

Review the work on hygiene and sanitation previously studied. Give special attention to heating and ventilation. Teach the proper method of heating school rooms; why the stove should be jacketed; why a ventilating flue is necessary. Why and how sleeping rooms should be ventilated.

THIRD QUARTER. *Water.* Water supply in the home. Study types of wells and pumps; methods of getting water to stock and to house; city water supply. Hard and soft water. Source of the water; how drinking water may become impure or dangerous; how typhoid is spread.

Simple chemistry of cleaning; soap; solvents for grease, paint, etc.; nature and uses of lye.

Pests. Household pests and how combat them; mouse, rat, fly, mosquito, cockroach, bedbug, clothes moth, English sparrow, moulds, bacteria, etc.

Farm and Home. Names and uses of various pieces of farm machinery; cost of each day's work of each; care of machinery. Need of modern conveniences in the kitchen, laundry, etc.

Study the propagating, transplanting and care of fruit bushes. Practical work with trees and shrubs. Cuttings. Pruning. If possible have pupils make a new strawberry bed both at school and at their homes.

FOURTH QUARTER. Continue work of previous years and quarters which have not been completed. Note especially the suggestions for the spring term of the third and fourth years.

Gardening. The work of this quarter should center around the school garden and the home garden. Read suggestions for the previous year and also those for the agriculture.

Plan many excursions to points of interest in the neighborhood. Have much outdoor work. Lead pupils to appreciate the beauties of the spring time. This is a good time to study early flowers. Study the young leaves. Continue the study of birds begun in previous years. Study the willow tree. Methods of growth, flowering, pollination, seeds, etc.

PHYSIOLOGY.

The purposes of instruction in physiology are:

(1) To create in each child a desire for the most perfect development of body and mind.

(2) To develop the co-operative spirit which will bring about the best conditions of public sanitation.

(3) To develop a public sentiment in favor of such laws, regulations, and practices as will make possible the building up of men and women with strong healthy bodies.

(4) To spread knowledge relative to the prevention of disease.

(5) To suggest first aid to the injured.

(6) To teach readiness in emergencies.

References:

Krohn's First Book in Hygiene.

The Gulick and Jewett Books.

Burrage and Bailey's School Sanitation and Decoration.

Bancroft's School Gymnastics.

Barry's, the Hygiene of the School Room.

Allen's Civics and Health.

Before planning the class work in hygiene the teacher (and also the board and patrons) should consider carefully the following suggestions made by the State Superintendent of Wisconsin:

1. Cleanliness of the room. Are the walls and the ceiling clean or is the dust filling the cracks and crevices? Is the floor clean? Have the windows been washed? Ordinarily the school room floor should be washed at least once a month.

2. Are the school grounds well drained, or does the water stand around the school house in wet weather? Is it muddy around the school house when it rains? A few loads of gravel may add much to the appearance of the grounds, and to the sanitary condition. Many schools have good walks from the road to the school house door.

3. Are the outbuildings in good condition? Are they clean? Are they free from marks? They should be scrubbed at the same time the school house is scrubbed. These buildings have much to do with the health of the children. Waste materials and poisonous substances kept within the body often give rise to diseases. Filthy and poorly constructed outbuildings promote in the children habits which often lead to serious abdominal troubles. Are the doors in good condition? A little child may refrain from going to the outbuilding if the door is off its hinges or unscreened.

4. Is fresh air coming into the room during school hours, or are the children breathing over and over again the same air? If the parents, board and teacher are really providing for fresh air to enter, and for foul air to escape, they are teaching a lesson in hygiene that is infinitely more valuable than pages of a text book memorized and recited word for word.

5. Is the room evenly heated? Is the stove able to do its work? Do you know how to get the most out of it? Can you make the fire and do you understand how to regulate the dampers and slides? Is the fuel in good condition, and is kindling provided? Is the floor cold? Is there a draft near the window? The temperature of the schoolroom should ordinarily be from 68 to 70-degrees. A good thermometer should be provided and it should be placed in such a position that it will indicate the temperature where the pupils sit. If fresh air is brought into the room through an intake it is often economy to have storm windows. Fresh air is one of the conditions for good work in school; it should be provided and should be well distributed.

Note: In order to have the school house heated to a uniform temperature it is often necessary to repair the building itself.

6. Is there light enough in the room? The sun does not shine in through the north windows during school hours; therefore, do not cover up the best portion of these windows with a shade. Get as much light as possible into the room, but do not let any of the children sit in the direct sunlight. Pupils should not sit facing a window. Are there any pupils with weak eyes? Straining the eyes when they are in such a condition may result in permanent injury.

7. Note the position of children sitting or standing in school. If improper postures are habitual, a few drills may be of value in straightening them up. If Bancroft's "School Gymnastics" is in the library, suggestions may be gotten from that. Sometimes we find the pupils studying and reciting the physiology lesson in such a posture as to violate the very laws of health they are learning about.

8. Are the desks of the proper sizes? Are they arranged properly so that the children are comfortable? Do the children's feet rest on the floor or are they dangling in mid air? Do they have to bend over when they are writing?

The desk should usually over-lap the seat back of it from two to three inches. Remember these desks should be for the convenience and comfort of the children, rather than for adults. Is there any child whose seat is too high for the desk in front of him? It is of little use to teach the children the nature and composition of the bony framework of the body and at the same time permit conditions to exist that allow this framework to become deformed. When new desks are needed, urge the board to purchase single desks.

9. How about the water supply? Is the water good? Is the ordinary open water-pail in use? The common drinking cup has been outlawed in Wisconsin and now every child should have his own cup. Let us suppose there is a child in school who has consumption in its first stages. How about the child who uses the cup next? At present there are 2,500 deaths from tuberculosis in this state every year. There are surely some cases in our schools.

10. Is the teacher and are the children neat in personal appearance? Is the school provided with a wash basin, soap and towels? Since the school is a part of the home, the equipment is not complete unless these articles are present.

11. Are the pupils taking proper exercise? Are there any pupils who stay in the school room during recesses? Their growing bodies need outdoor activities. Exercise tones them up.

12. Do any children sit with their mouths open? Do the children breathe through their mouths? Perhaps there are some physical defects present, such as adenoid growths, enlarged tonsils, or the like.

Are any of the pupils near-sighted? Any who cannot see the work on the board? If Barry's "Hygiene of the School Room" is in the library, test the pupils' eyes by means of charts easily obtained. Are the blackboards of a glossy appearance so that it is difficult to see the writing? It is ridiculous to give instruction regarding the anatomy of the eye when such conditions are found. Are there any children whose hearing is defective?

13. Are the children provided with good shoes or do they sit in the school room with wet feet? Rubbers should not be worn in the school room.

14. Are the children getting plenty of sound, refreshing sleep? Is it a custom for the children to attend social functions frequently, stay up late at night and eat late luncheons? Such practices mean poor work in school as well as a nervous strain that is detrimental to health.

Are their sleeping rooms supplied with fresh air?

Class B.—Sixth Year, 1912-13.

This year's work should alternate with the fifth year in nature study. The work should be based on some elementary text. This text should emphasize hygiene and sanitation. You will find by re-reading the nature study course that much hygiene is given the first four years. Review these facts. The suggestions printed above will furnish the basis for much practical work in hygiene and sanitation.

FIRST QUARTER. *Food.* Name the different kinds of food. How obtained. Value of each kind. Lead them to see that some foods are far more nutritious than others. The preparation of food. Get the children to feel that what they learn in the kitchen is of great importance. Children should be led to see that the work of the home is a part of education. Foods include drinks. Water is the universal drink in nature. Importance of pure water. See suggestion 9 above. Alcohol and tobacco are not foods. State some of the evil effects of the use of alcohol. Of tobacco.

SECOND QUARTER. *Food is made into blood.* Necessity of a system of circulation; blood and lymph; veins, arteries and the heart. Study the heart from a beef heart. If possible, show the children the circulation in the web of the frog's foot. What things affect pulse rate? What is the normal pulse? Count pulse. What is the normal temperature of the body? What is the source of the heat of the body? What to do when blood vessels are cut? Effects of alcohol and tobacco on the circulation. Explanation of the red face of the drinker.

Respiration. Position and nature of the lungs. How the blood is changed in the lungs. The effect of dust on the lungs. Tobacco smoke. The effect of exercise on the breathing. How should we breathe? Why we need pure air? What makes air impure? How much air do we need? (2,000 cubic feet per hour for each person) How often should the air of this room be changed? Is cold air pure air? How does fire place help ventilation? Study ventilation and heating of the school room and the home. See suggestions 1, 4, 5 and 12 above.

THIRD QUARTER. *Emergencies.* Treatment of cuts. Bandages. Use of court plaster. Treatment of burns, frost-bites, sunstrokes, nose-bleeding, fainting. What to do in case of fits, drowning, choking, poisoning, sprains and bruises.

Skin. Structure and use. Value of cleanliness and bathing. Effects of various kinds of baths. Airing of clothing, beds, etc. Cleanliness of hands in cooking. Treatment of wounds and burns.

Hair. Use, structure, and care. Shampooing and tidiness.

Nails. Use, structure and care. The beauty of well kept nails.

Eyes. Care of the eyes; strong light; proper position of book; book print; selection of glasses when necessary. Optic nerve.

Ears. Use, structure and care. The value of cultivated hearing. Auditory nerve.

Nose. Use, structure and care. Use of handkerchief. Olfactory nerve. See suggestions 6 and 10 above.

FOURTH QUARTER. *Muscles.* Uses of. Structure. Necessity for exercise. Use and abuse of athletics. See "Games and Plays" in this Course of Study.

Bones. Structure. Composition. Uses. Effect of pressure. Cause of round shoulders and curved spine. Adjustment of desks and chairs. Injury and repair of bones. Joints, kinds of and uses. See suggestions 7, 8 and 10 above.

Regularity. In meals, sleep, exercise, etc. Value of forming regular habits. Read the King and His Wonderful Castle.

The value of fresh air and sunshine should be impressed upon pupils.

Study the causes of disease: Germs, carelessness, uncleanness, over-eating, lack of exercise, lack of ventilation, clogging of the body with wastes and poisons, alcohol, tobacco, etc.

Treatment of diseases. Sunshine and cheerful surroundings, clean bodies, clean food and water, clear air, clean thoughts, nourishing foods (not too much), rest. (Very little medicine.) See suggestions 3, 5, 8 and 11 above.

AGRICULTURE.

Why teach. To meet the demands of the present day, and to justify their claims for public recognition, schools must make provision for the vocational element. The school has no right to send out a pupil with a mass of knowledge that has no reference or application to the life that he is to live. There will be

much more happiness and contentment in the human race when it learns to do well and to appreciate the common things of life.

In teaching elementary agriculture, it should not be expected that pupils will be made skillful in using machinery or handling stock, but they will be taught, to think, to answer the questions: Why do we plow? Why do we prune or spray? Why should milk cans be thoroughly scalded?

How teach. Agriculture cannot accomplish much in rural schools if taught from the text alone, yet texts must be used and lessons assigned. It is a subject which requires concrete materials for much of its subject matter. Yet some materials cannot be exhibited in the school room, though some of them should be. Most of the practice work may be done by the pupils at home and should fit into the home life, not be forced into it.

A school garden is one of the necessary equipments. Much misconception and prejudice against school gardens in the country would be removed if teachers did not try to copy after city school gardens. The country school garden should not be a place for display, not a place to work pupils, not an extensive truck patch, but a space six to twelve feet wide by twenty or thirty feet long, enclosed by a good fence to exclude marauding animals, where can be grown not only plants which are grown on the farm, but also new varieties of crops, crops of other lands; where fertilizers can be tried out, where new flowers and vegetables can be introduced into the pupil's already wide acquaintance with plants. Thus the school garden can be made a purveyor of knowledge that is new, and therefore interesting.

As to what should be grown in a country school garden, the following may be suggestive: Do the children know barley? Have they ever seen flax or hemp? Few outside of Southeast Missouri have seen cotton or rice growing. Do your pupils know all the clovers and economic legume crops? Are they familiar with Johnson grass? Meadow fescue? English rye grass? Bermuda grass? Orchard grass? Do they know the egg plant? Peppers? The wonder berry? How many of the flowers listed in the seed catalogs do pupils know?

If a few new plants are placed in the garden each spring, the interest will be increased. In some cases one of the boys of the school will care for the small garden during the summer in order to study the new plants, and the pupils will visit the garden during the summer to see these plants develop.

Seeds for this work may be obtained from seed stores or from the Department of Agriculture, Washington, D. C., or from the experiment stations of the various states. If you *determine* to have a school garden, you *will succeed*. Do not give up if you fail the first time.

The outlines given below are meant to be suggestive. Agriculture is not a recitation subject; it is an investigation subject. To pursue it properly there must be freedom between teacher and pupil to talk freely about the business of farming, its operations and its compensating pleasures. The conversation should be such as would arise between two persons each with some knowledge of the subject and anxious to learn more.

Agriculture lends itself well to sequence. An outline may be made out at the beginning of a term or school year in which study will keep pace with farm work and at the same time correlate quite closely with other branches. For example, corn judging may best begin about October 1st, when fairs and institutes and corn shows are at their best. Seed study may lead up to it in September, confining seeds to farm crops with their weed and insect enemies. The teacher will note that the outline brings out this sequence all the way through the year.

Class A.—Seventh Year, 1911-12.

This work should alternate with the work in farm management, road building and physiology outlined for the eighth year. By this method the "A" Class spends one and one-half years on agriculture and one-half year on physiology. This is sufficient for physiology, when it is remembered that the entire sixth year also is given to it.

FIRST QUARTER. *A study of seeds.* Have pupils list the crops of the district. Each crop subheaded into varieties. Example: Corn—St. Charles White, Boone County White, Ried's Yellow Dent, etc. Pupils may bring samples of each variety and describe in class. What are the characteristics which make any variety adaptable to the locality? List varieties of other localities. Study other crops. Study each kind of seed in its germination and in the structure of its parts. Note that seeds may be classified into three groups as to the position of the germ or embryo and to the position of the stored food: namely, those having the germ on one side. Examples: Corn, wheat, etc. Those having the germ fully developed and food stored in two large leaves or cotyledons. Examples: Bean, pea, etc. Those having the germ in the center, surrounded by the food supply. Examples: Sunflower, persimmon, black-haw, etc. Plant fall varieties of wheat and grasses in the school garden.

While collecting seeds of useful plants, seeds of the weeds that are troublesome to each crop should be collected. Samples may be kept in small bottles and labeled. What are the most troublesome weeds of the cornfield? Meadow? Other crops?

What insects trouble the same crops? Make a collection of the insects found feeding upon corn and other crops. Label each. Determine if the insects are biting or sucking. Discuss methods of destroying them.

The outlines, classifications, drawings, observations and descriptions required in the above study of seeds and crops as well as in that which follows should all be recorded by the pupil in a well organized note book. These exercises should be made a part of language, penmanship and drawing work. There can be no better means of training in accuracy of statement, in neatness of form and arrangement, in close and thorough observation. The pupil who hands in the poorest outline is the one who most needs this kind of work. The first draft of an outline should be brought to class on common paper for approval and correction before being entered in the bound note book. Take any one paper during a class recitation and show how it may be rearranged to advantage. Pupils then may correct their own outlines. Much time may be spent at the beginning in learning how to do these things.

A Study of Corn. A field crop. Have a pupil bring a complete corn stalk to school; root, leaves, stalk, ear, husks, silk and tassel, as far as possible uninjured. Have pupils determine the number of leaves and nodes on the one stalk. Send them to a nearby field to count twenty each to determine the average of all corn. Discuss the nature of brace roots. Note the position of the ear. Which node does it grow upon? Is it always on the same one? Study the leaf and its parts. What part of a corn leaf is comparable to the stem of an oak leaf? Take off all of the corn leaves. Note the rudimentary ear on each joint below the ear. Why are there none above the ear? How many leaves are there above the ear? How many shucks on the ear? Compare the number of shucks with the number of leaves. Find some shucks with tiny leaflets on the ends. What is a shuck? Examine the tassel. How many flowers in each spikelet? Note that they are two or four. Imagine a tassel grown together as a cob. Would this account for ears of corn always having an even number of

rows? Measure the leaf surface of several stalks. Explain the use of the silks and the pollen. Have pupils find barren stalks, male stalks, tall stalks, short stalks. Teach value of heredity and uniformity.

Corn Judging. Obtain as many standard varieties of corn as may be found in the neighborhood. Be sure to have at least one sample of yellow corn and one sample of white. A sample consists of ten ears. Give an exercise in distinguishing the different varieties of corn available. Have pupils write out from observation a list of points alike and points different in each variety. Drill in recognition of varieties.

Let each pupil take a numbered ear to his seat and describe, in writing, noting the following points in order: Shape of ear, length, circumference, color of kernel, color of cob, shape of kernel, indentation of kernel, butts, tips, space between rows, number of rows, size of cob.

Ask pupils to pick out the best ten ears of corn they can find at home. Let them bring this corn to school, contesting to see who can bring the best ten ears. Advise them to keep a box or barrel in the crib at home into which the most likely ears may be thrown at feeding time. From this supply the ten may be selected.

Get score card blanks from the Sounty Superintendent, State Normal Schools, or University. Let each pupil score independently every sample. These scores may be added and the best sample determined by the pupil's own judgment. These ears may be returned and other ten ears brought. Continue as long as pupils can bring better samples. Hold a corn show at the close of the corn season. Encourage pupils to enter county exhibiting and judging contests.

SECOND QUARTER.—In 1910 there were 7,795,786 acres of corn which produced 252,472,100 bushels. What was the average per acre? If it costs \$12 to raise an acre of corn, what is the profit per acre at current prices?

Make a study of wheat, oats and other crops; the emphasis to be given each will depend upon the time at the teacher's command and the relative local importance.

Determine the yields per acre of all the crops grown on the farm. Calculate cost of planting, seeding, cultivating, harvesting, etc. Study crop rotation as a factor in economy of labor; effect on keeping down weeds and insect pests; value in furnishing a variety of feeds, value in retention of fertility. Study construction and advantages of silos.

Soil. List the forces which are at work, making and unmaking soil; as temperature, water, atmosphere, chemical action, animal and plant life and decay. Study each natural force as a constant factor.

Account for the composition of the soil; the presence of sand and gravel, silt, clay, humus. What are the functions of each ingredient? Discuss conditions of soil as to state of cultivation and effects on crop production. Study the water condition of the soil as to rainfall, erosion and absorption. Study the capillary movement of soil water and the principles involved in the conservation of water for crop use.

Experiments. A gallon each of sand, clay and humus will be needed. Sand should be washed by stirring it in a bucket of water and then pouring off the muddy water. Repeat until the water becomes clear. Clay can be obtained at cuts in roads. Care should be taken to get it clean. It should be fried and then pulverized, which may be done by pounding small quantities at a time in cloth bags. Humus can be found at the base of a rotten stump or under rotten logs. A fine black quality should be selected. It is best for pupils to do as much of the work as possible in collecting material and making experiments.

Lead pupils to see that soil is composed of organic and inorganic matter; study the formation of each. Also, the difference between soil and subsoil.

Wet some clay, sand and humus, stirring thoroughly, and let pupils notice the difference in appearance and in touch. Set away to dry and notice again. From this draw conclusions as to which kind of soil can be worked soonest after a heavy rain. Make a mixture of good sandy loam.

Put a teacup each of gravel, sand, clay and humus into a half gallon fruit jar; fill with water, shake thoroughly and set away to settle. Notice which settles first; which last. Notice which settles at the bottom, which next and so on. Draw conclusions. Study soil texture and soil tilth and the things conditioning each.

Put four tablespoons full of fine powdered clay into each of two quart mason jars of rain water. To one add a teaspoon full of freshly slacked lime; shake each thoroughly; let them settle and notice the result. Lime causes the clay particles to gather or form in flakes; we say it flocculates. Adding lime to fine clay soil has the same effect; it causes the fine particles of clay to collect in flakes and puts it in good tilth. This, however, requires large quantities of lime.

Get two saucers half full of sand and two half full of clay. Stir water in one of the saucers of sand and one of clay until each is a thick paste. Sprinkle water on the other two until they are well moistened, and set away for two or three days and notice the difference. What causes it? Which is in the better condition for plant growth and cultivation?

Estimate the amount of water used by different crops in inches of rainfall. Determine crop limitations by annual rainfall, counting one-eighth of the rainfall available for crops. Proper cultivation methods may conserve one-half more than the above. What is the value of cultivation to the crop in increase?

What constitutes plant food? Learn the necessary elements and the forms in which they become available for plant growth. Work out the processes by experiment as far as possible by which the plant obtains its food materials. Drill carefully on the physiological processes of the plant with reference particularly to the synthesis of foods. Discuss the function of respiration in plants with particular reference to plant roots. What is film water? What elements of soil fertility are most likely to be deficient in soils? Study carefully the sources of nitrogen supply in the soil. Bring out the relation of organic decay and nitrification and nitrogen fixation. What commercial fertilizers supply potassium? What phosphorus? Determine by problems the amount of these elements removed by various crops. Counting legume crops as returning to the soil a supply of nitrogen equal to the amount found in the crop removed. Work out a rotation for crops where legumes are plowed under which would conserve soil fertility in the nitrogen element.

THIRD QUARTER. *Animal Husbandry.* Animal Husbandry is stock raising. Domestic animals are those that have been tamed by man for his use. The horse was probably the first animal domesticated, but the ox and the camel were both used in very early times.

The horse. The horse has always been closely connected with man's progress. Study carefully the distinguishing characteristics of each breed. Get pupils to bring to school a good type of a draft horse and of a saddle horse or a driving horse. Measure and notice the difference which in part make the distinguishing characteristics of the two types. Obtain score cards from the College of Agriculture, and learn the position of all score points on the animal. Follow score

card closely and score animals brought to school. Scoring may be done at noon hour or after school. Apply scoring to all farm animals.

The draft horse was developed in Central Europe, where grass was plentiful. The best known breeds of draft horses are the Percheron, English Shire, Clydesdale and Belgian. Study each.

The light class includes thoroughbreds, standard bred, saddle horses and ponies. Thoroughbreds include the Arabian and Barb horses. Standard bred horses include the noted trotters and pacers. Most great trotters trace back to Hambletonian 10. The fastest trotting record was made by Lou Dillon, in 1:58½. The world's fastest pacer is Dan Patch, time 1:55¼. The American Saddle Horse begins with "Denmark," a noted thoroughbred horse, born in 1839. What are the five gaits of the American saddle horse? Study the different breeds of ponies. What is spavin? Splint? Knee spring? Heaves? Colic? Give treatment of each. Give a balanced ration for a draft horse, for a speed horse.

The Mule. Less subject to disease or blemish than the horse, will live on coarser food and is not so likely to be injured by over-eating or over-working. The mule market is a business of first importance. To sell readily, they should be in good flesh, and should have good eyes, good wind and be good workers.

Cattle. The origin of Domestic Cattle. The two great types or classes. Notice the distinguishing characteristics of each class. Write a composition describing a good beef steer. Why are cattle fattened? Draw cut of a carcass and locate the sirloin, chuck and so on. Learn how many cattle are being fattened in your school district. What are "Grade Cattle?" Packing houses? By-products? A good ration for beef cattle? Stock cattle? Milk cows? Hand-fed calves? How many cows in your district? What breeds? Estimate their value. Find out how much it costs to feed a cow a month? How much for all the cows in the district? Estimate the milk these cows give at five cents a quart and determine the gain or loss for all the cows and for the average.

How many pounds in a gallon of milk? What is meant by per cent of butter fat? What per cent of butter fat in the milk of a good cow? Emphasize cleanliness in barns and homes in the handling of milk.

Hogs. Make a list of the different breeds of hogs found in your school district. What is a good ration for stock hogs? For fattened hogs? At what age should hogs be marketed? Tell about the treatment for hog cholera. How much corn is required to make a pound of pork? Estimate the value of the hogs in your district. Write a composition on the products from hogs.

Sheep. Study as above.

Feeds. List all stock foods produced on the farm as protein or carbohydrate feeds. Add the obtainable commercial by-product feeds. Feeds containing a nutritive ratio of 1:6 and under are classed as proteid feeds. Those over 1:6 are carbohydrates. Star the feeds rich in mineral food. Study the physiological function of each class of feed in the animal body. By the aid of the textbook feeding tables balance rations for different purposes. Study stable ventilation and other sanitary conditions affecting the health of the animal.

Study the alimentary canal from the school physiology, or, better still, from a dissected frog. Compare the digestive tract of each domestic animal with all others. What is the function of each part of the alimentary canal? What digestive juices are potent in digestion? Where are they secreted and what are their separate functions?

FOURTH QUARTER. *Chickens.* Study the different breeds. Learn the number

of chickens in your district, and find their value at current prices. Make a list of the different breeds in your district. Make a plan for a good chicken house; a coop, a feeding trough and a watering trough. What is a good ration for egg producing? For fattening? Describe an incubator. Study a score card and copy it in your note book. Have the class to score some chickens. Name some diseases common among chickens and give remedies for each. Study other fowls in the same way.

Fruits. Examine a branch of an apple tree. Notice the location and size of the buds. Which will produce fruit? Which young twigs? Find the rings on the branch; what do they indicate? Which are the longer, twigs that bore fruit or those that did not? Examine several branches and see if they have borne apples often during past years. Why are trees pruned? How should they be pruned? Why are orchards sprayed? Will the same spray do for insects which suck the juice and those that bore into the tree? What is smudging? Tell how to prepare Bordeaux mixture. Show pupils how to bud and how to graft; require them to do each in school. Tell how to plant young apple trees; how should an orchard be cultivated? Name the apples in your home district that mature early; those that are the best keepers. Make drawings of two varieties of apples; cut an apple in two halves and make drawing showing the core; cut an apple crosswise and make same drawing. Tell how to prune grapes. Why are grapes "bagged?" What is a good spray for grapes? Tell how to plant and to cultivate a good strawberry bed.

BULLETINS.

Before beginning the study of Agriculture, teachers should secure the list of bulletins found below. They are sent free; requests for them should be made early, as it usually takes some time to send them out. In ordering, write to the department issuing the bulletin and give number and title.

Agricultural College, Columbia, Mo.

- Bulletin No. 87.—Co-operative Variety Tests of Corn.
- Circular No. 45.—Selecting and Judging Corn.
- Circular No. 38.—The Principles of Maintaining Soil Fertility.
- Bulletin No. 90.—Fattening Cattle on Blue Gras Pasture.
- Bulletin No. 95.—Pork Production with Forage Crops.
- Bulletin No. 62.—The Hessian Fly.
- Bulletin No. 51.—The Chinch Bug.
- Bulletin No. 11.—The Horse.
- Bulletin No. 10.—The Soil.
- Bulletin No. 4.—A Study of Cattle.

State Board of Horticulture,* Columbia, Mo.

- Pruning Peach Trees.
- Combating Diseases and Insects of the Orchard.
- Missouri Apple Growing.
- How to Grow and Care for Grapes.
- Strawberry Growing.
- Cherry Growing.
- The Twelve Most Popular Varieties of Missouri Apples.
- Spraying for the Control of Peach Brown Rot and Scab.

Department of Agriculture, Washington, D. C.

- Farmers' Bulletin No. 28.—Weeds and How to Kill Them.
 “ “ No. 188.—Weeds Used as Medicine.
 “ “ No. 86.—Thirty Poisonous Plants.
 “ “ No. 428.—Testing Farm Seeds in the Home and in the School.
 “ “ No. 382.—The Adulteration of Forage Plant Seeds.
 “ “ No. 408.—School Exercises in Plant Propagation.
 “ “ No. 199.—Corn Growing.
 “ “ No. 253.—The Germination of Seed Corn.
 “ “ No. 409.—School Lessons on Corn.
 “ “ No. 99.—Three Insect Enemies of Shade Trees.
 “ “ No. 229.—The Production of Good Seed Corn.
 “ “ No. 155.—How Insects Affect Health in Rural Districts.
 “ “ No. 22.—The Feeding of Farm Animals.
 “ “ No. 42.—Facts About Milk.
 “ “ No. 106.—Breeds of Dairy Cattle.
 “ “ No. 55.—The Dairy Herd.
 “ “ No. 70.—Principles of Horse Feeding.
 “ “ No. 49.—Sheep Feeding.
 “ “ No. 63.—Care of Milk on the Farm.
 “ “ No. 379.—Hog Cholera.
 “ “ No. 51.—Standard Varieties of Chickens.
 “ “ No. 287.—Poultry Management.
 “ “ No. 357.—Methods of Poultry Management.

Department of Agriculture, Bureau of Entomology, Washington, D. C.

- Circular No. 39.—The Common Squash Bug.
 “ No. 51.—The Cockroach.
 “ No. 84.—The Grasshopper.
 “ No. 34.—House Ants.

Department of Agriculture, Bureau of Plant Industry, Washington, D. C.

- Farm Fertilizers.
 Fall Breaking and the Preparation of the Seed Bed.

State Historical Society, Columbia, Mo.

State of Missouri.

Labor Bureau, Jefferson City, Mo.

Red Book.

In addition to these books and bulletins, each school library should have for reference a few good texts on agriculture, such as *A Unit in Agriculture*—Elliff—Row Peterson.

ELEMENTARY SCIENCE. Class A.—Eighth Year, 1912-13.

The work of this year should alternate with the seventh year. The work of the eighth year has been arranged somewhat according to the seasons. The first quarter is given to farm management, suitable work for the fall.

The second and third quarters are devoted to a more advanced study of physiology than was possible in the sixth grade. The winter is the best season for the study of physiology. The fourth quarter is devoted to road building. At this season of the year the value of good roads can be easily taught.

FIRST QUARTER. *Farm Management.* Farm Management teaches *what* and *how much*. It does not teach how different farm operations are performed, or the reasons for doing them. Farm Management takes fruit growing, stock raising, the care of the soil and crops and fits them together into a system or plan of management.

The great problem of every farmer that desires to be wholly successful is to make his farm more productive—raise bigger crops—and at the same time make it more profitable—bring in more money. Neither one of these points alone can be taken as the true measure of success. They must go hand in hand.

Exercises. Is there any relation between the fertility of the soil and the prosperity of the farmer? To answer this question, make a soil map of the State and then make a map showing value of crops per county and one showing value of stock per county. A more fair comparison would be made by making the crop map show value of crops per acre. Reference: "State of Missouri." If reference State of Missouri cannot be obtained, work out these exercises for the county.

Farm Classification.

Farms are sometimes classified according to the method of management or the way they are run; that is, according to the operations carried on, on the farm.

According to this classification, farms may be divided into two large divisions—specialized and diversified.

The specialized farm presents the greatest risks, takes very special conditions, and as a rule, can be handled only by the farmer who has very special and favorable conditions.

The diversified farm has many sources of income, and raises nearly everything that the stock and family eat. The failure of one crop will not mean a complete failure on such a farm.

Exercise. Divide all the farms in your community into two divisions, according to this basis, and after each farm name the main source or sources of income.

Farms may also be classified or divided according to the methods followed in doing the work; that is, according to the way operations are carried on. These two large divisions or classifications are *extensive* and *intensive*. An extensive farm is one generally large in area and the farming is carried on with big machinery. An intensive farm is generally small and every foot of ground is made to produce all that is possible.

Exercise. Divide all the farms in your school district according to the intensive or extensive classification.

The common or ordinary basis for classifying farms is according to the source or kind of income. The income from the products for which the farm is named must be between 60 per cent and 70 per cent of the total income. For example, if Mr. Smith keeps dairy cattle, some sheep and a few hogs, and at the end of the year finds that he has sold \$650 worth of dairy products and \$250 worth of hogs and sheep and \$100 worth of other products, then we say

he has a dairy farm. If he sold \$400 worth of dairy products, \$300 worth of hogs and \$300 worth of all other products, we would call his farm a dairy and hog farm.

Exercises. Make a list of all the farms you know and classify each according to its type, based on source of income. Name all the different types of farms you can.

Size of Farm.

Much is said about the size of farm. Some say "a few acres very carefully and intensively tilled;" others say, "large farms big machinery, and a big business." An investigation in the State of New York (Prof. Warren of the Cornell University), covering 586 farms, shows that the farmers owning these farms received as their pay for their year's work the amounts shown after each group of farms of a certain size.

Farms 30 acres or less in size made for their owners as wages, after paying all other expenses, for a year.....	\$168.00
Farms, 31 to 60 acres.....	254.00
Farms, 61 to 100 acres.....	373.00
Farms, 101 to 150 acres.....	436.00
Farms, 151 to 200 acres.....	636.00
Farms over 200 acres.....	946.00

This shows that the larger the farm the more it paid the farmer.

Exercises. Make a table showing all the farms in your school district classified according to size, thus:

Group A.	Group B.	Group C.	Group D.	Group E.	Group F.
Less than 25 acres |	26 to 75 acres |	76 to 120 |	121 to 200 |	201 to 300 |	Over 300
		| acres. |	| acres. |	| acres. |	| acres.

Farmers living on which group are the most prosperous?

Land Value.

We are often told that the poor farmer should buy cheap land, land that for some reason, as drouth, rocks, hills, sand or water, will not raise big crops. Is this true? Give reasons for answer.

Exercises. Two farms, 160 acres each—120 in cultivation and in every other respect the same, produce crops as follows:

Farm No. 1 will yield 50 bushels of corn, 40 bushels of oats and two tons of clover hay per acre, and can be bought for \$100 per acre. Farm No. 2 will only yield 25 bushels of corn, 20 bushels of oats, and one ton of hay per acre, and can be bought for \$50.00 per acre. The difference in productiveness is due to the fact that Farm No. 2 was misused by some farmer who just grew such crops as corn and wheat that took all their plant food out of the soil, and did not keep stock so he could manure his ground. If each farmer grew 40 acres of each crop each year for five years, the yields remaining the same, which farm would be most nearly paid for at the end of this time, provided the total expenses of raising the crops on Farm No. 1 were \$1,000.00, and on No. 2, \$600.00; price of crops those current in your neighborhood.

Figure this problem again, using the following figures for cost of production of crops per acre:

Farm No. 1. Corn, \$12.50; oats, \$10.00; clover hay, \$11.00 (both crops).

Farm No. 2. Corn, \$10.00; oats, \$7.50; clover hay, \$8.50.

The difference in cost is on account of difference in interest on land.

Measuring Land.

Exercise. In measuring land, do farmers generally speak of the distances in feet, yards, rods, poles or chains? Give the measurements for a piece of square ground of 160 acres, 40 acres, 10 acres.

Farm Map.

Before a farmer can plan his farm intelligently he must have a map showing shape and size of each field, location and kind of all fences, buildings and other permanent features.

Exercises. Make a map of your farm according to the following directions: (1) Make the top of the map north. (2) Write all words in the same position or direction. (3) Make the fences thus—/—/—/—, cattle, but not hog fence; —x—x—x— hog tight fence; ————— temporary division. (4) Write letter of field in upper left hand corner of field, and area in upper right hand corner. (5) Trace course of streams and draws. (6) Be sure that total area of different fields check up with correct size of farm. (7) Show with small squares and circles location of house, lawns, wells, springs, etc.

Exercise. Have pupils plan a convenient arrangement for home grounds. Have pupils suggest rearrangements of their own home grounds. Plan a home garden. Plan an orchard as to fruit varieties. Work out plans for the decoration of home lawns and also of the school grounds.

Take account of the land valuation of the different farms of the district. Measure the valuation of fences, buildings and other improvements, as orchards, wells, ponds, etc. What is the machinery valuation of the farm? The cattle valuation? The horses? Sheep? Hogs? Poultry? What is the crop valuation? Work out the cost of maintaining the farm, allowing interest on the total investment. What is the fertility loss by crops removed? Each part of the equipment should also bear its part of the taxes.

Fencing.

Exercise. If a woven wire hog-proof fence can be built for about 60c a rod, how much will it cost to fence a square 40-acre field? This figure considers corners, gates, etc. How much will it cost to fence a 40-acre field 20 rods long and the required length?

Depreciation of Machinery.

Under the conditions that most farmers keep their machinery it is figured that the average machine will last 10 years, or have what is called a 10% depreciation.

Exercise. If a farmer has \$1,000.00 worth of machinery, and if by building a shed for it he can make it last 15 years instead of ten, how much will he have saved at the end of five years? Will this build a shed?

Rations for Horses.

The average figure taken as a basis for feeding a work horse is: Feed one pound of grain and one pound of hay per day for every 100 pounds the animal weighs. For example, a horse that weighs 900 pounds should receive 9 pounds of corn and oats, mixed, half and half, and 9 pounds of hay every day.

Exercise. How many bushels of corn, of oats, and pounds of hay will be required yearly to keep a team weighing 1500 pounds, if fed as outlined every day in the year.

Will it, in reality, on your farm, take the amount of feed shown in your problem? Why?

Rations for Cows.

A good standard for feeding dairy cows is: Feed in the proportion of $3\frac{1}{2}$ parts of silage, one part of hay and one part of grain. For every three pounds of milk feed one pound of grain. Mix the grain by weight—4 parts corn meal, 2 parts bran and 1 part oil meal.

Exercise. How many pounds of the different kinds of feed would be required to feed a cow that gave 6,000 pounds of milk per year, on an average of 20 pounds a day for 10 months. Allow her no other feed or pasture. Count her on pasture for the two months dry without other feed.

Value of Manure.

The composition and value of barnyard manure depends upon four things: (1) the age and kind of animals, (2) quantity and quality of food fed, (3) amount and kind of bedding used, (4) and method of caring for manure, and how it is stored.

Exercise. Based on 15c a pound for nitrogen, 13c for phosphorous, and 6c a pound for potassium, it is figured that the value of the manure produced by a 100 pound sheep, in one year, is \$2.60; by a 200 pound hog, \$3.00; by a 1,000 pound cow, \$29.25, and by a 1,000 pound horse, \$27.75.

Figure the value of the manure produced on your farm in one year. M. S. Farmers' Bulletin 192.

Increasing the Value of Manure.

Manure does not contain as much phosphorous as it should to do our soils the most good. It has been found that adding acid phosphate, or rock phosphate, to the manure as it is made, helps to hold some of the plant food already in the manure that might otherwise escape, and it also increases the value of the manure over and above what it costs to treat it, from 50c to \$2.00 per ton. The average well kept manure is worth \$2.00 to \$2.50 per ton.

Exercise. After knowing the value of the manure produced on your farm, figure what the increased value would be over and above cost of treatment if treated with acid phosphate. It costs about \$2.25 to add the fertilizer, adding about 40 pounds per ton of manure.

Exercise. Write a paper on the best way to handle farm manure.

Soil Fertility.

We know there are two great classes of crops—leguminous and non-leguminous. The first take part of their food from the air, the second take all their food from the soil. There are ten kinds of food that all plants use, but only three

of these concern us, for nature has supplied seven of them in abundance. The three we have to deal with are, nitrogen, phosphorous and potassium. A bushel of corn has in it about 1 pound of nitrogen, a little less than $\frac{1}{2}$ pound of phosphorous, and about the same amount of potassium.

Exercise. If these plant foods cost, when purchased in commercial fertilizers, nitrogen 20c per pound, phosphorous 12c per pound, and potassium 6c per pound, how much would it cost to put back in the soil in the form of commercial fertilizer what one bushel of corn removed, to say nothing of amount taken out by the corn stalk.

Figure this for a 50 bushel crop of corn and add to it, which will represent the amount of the three elements in the stalk, $\frac{1}{2}$ more nitrogen, $\frac{1}{3}$ for phosphorous, and $2\frac{1}{2}$ for potassium. These figures are only approximately correct. Make figures for other crops.

Plants and Soil Fertility.

Some plants that generally grow on good soil are black walnut, hackberry, and elm trees, smart weed, and sometimes morning glory and rag weed. On poor soil we see a little grass called dog hair, or wool grass, rat tail and such trees as Blackjack and Postoaks.

Exercise. Write your estimation of the fertility of the soil of your farm based on the plant growth upon it.

We sometimes summarize the advantages and disadvantages of growing crops, thus:

Corn—Advantages.

1. It produces a maximum amount of grain per acre.
2. It furnishes employment during a long period of the year.
3. It allows of cultivation.
4. It has few uncontrollable pests.
5. It is highly adapted to this region.
6. It can be fed on the farm or sold as a cash crop.
7. It has many means of being harvested.
8. Time of harvesting may extend over a long period.

Disadvantages.

1. The area one man can handle is quite limited.
 2. It requires cultivation and tending throughout the crop season.
- As can be seen, the same point may be both an advantage and a disadvantage.

Exercise. Make a similar outline for wheat, oats, tobacco, clover and cowpea hay.

Cultivating Corn.

We find that it costs from 30 to 55 cents an acre to cultivate corn.

Exercise. If by cultivating the corn late with a one-horse cultivator the yield is increased from 3 to 5 bushels per acre, how much profit will the farmer make on late cultivation?

Use of Catch Crops.

By putting cowpeas in corn a catch crop will grow that will fatten—add 15 to 20 pounds to—8 to 10 lambs per acre, in from 60 to 90 days. They can gen-

erally be purchased for \$5.50 per hundred weight and sold for \$6.50 per hundred weight. Not counting loss, commission charges, or freight, figure the profit on feeding enough lambs to consume the cowpeas in a forty-acre corn field. It is safe to say that the benefit to the soil will more than repay the cost of putting in the peas.

Pasturing Down Crops.

We find that hogs can be turned into a corn field that also has cowpeas growing in it, and they will eat the peas and corn, without wasting materially any of the grain, and that under these conditions they will make one pound of gain for every four pounds of corn eaten. If fed just corn alone they will require about five pounds of corn to make one pound of gain.

Exercise. If a farmer should pasture down 20 acres of corn and cowpeas, corn yielding 50 bushels per acre, how much more pork would he get than if he harvested it and fed it in the dry lot? What would the additional pounds of pork be worth at 6c a pound.

Write a paper giving all the good and bad points you can think of in connection with pasturing down crops.

SECOND QUARTER. *Physiology.* The second and third quarters of this year are devoted to a study of physiology. A strong eighth grade text should be used. Before beginning this work read the introduction to physiology in the sixth grade.

1. *Blood.* The transporting fluid; where found; physical properties and composition; functions of various constituents; nature and purpose of coagulation. Organs for circulation of blood and lymph; location and structure of heart (diagram showing plan); work of heart, how performed; kinds of blood vessels and purpose of each kind; purpose of elasticity in arteries, of valves in the veins and heart, of muscular coat in arteries; structure and functions of capillaries; effect of exercise upon the movements of the blood and the lymph; effect of rheumatism upon the heart; checking of flow of blood from wounds; effect of alcohol upon the organs of circulation; effect of tobacco upon the heart.

2. *Passage of oxygen through body.* Organs of external respiration and means of transferring oxygen from the air to the blood and carbon dioxide from the blood to the air; structure and location of lungs, thorax, pleura; air passages and means for keeping them clean and open; taking up of oxygen and giving off of carbon dioxide by cells (internal respiration). Advantages of breathing through the nostrils; deep and full breathing versus shallow breathing; ventilation; nature and cause of tuberculosis; how the disease is communicated; precautions in care of consumptive patients; outdoor cure. Artificial respiration.

3. *Foods and their digestion.* Kinds of nutrients, sources of and purpose served by each; differences between carbohydrates, fats, and proteids in composition and purpose; proportions in which they should be eaten. Drugs; how they differ from foods; alcohol a drug, not a food; dangers from adulterated and impure foods; spoiled meat and ptomaine poison; how foods may be carriers of germs (milk for example); nature and purpose of digestion (foods to enter the body must be dissolved); alimentary canal, general arrangement and structure of parts; digestive glands; digestion of starch (where begun and finished, into what changed); digestion of proteids and of fats. Methods of eating that aid and hinder the flow of the digestive fluids; habits that aid in the regular discharge of waste from the canal; care of the teeth; advantages of cooked over an uncooked food; results of overeating and of overlapping of meals; effect of alcohol, tea and coffee upon the organs of digestion. Typhoid fever; nature and cause of the disease; how communicated from the sick to the well; means of prevention; dangers from the house fly.

4. *Passage of digested nutrients to the cells.* Small intestine as an organ of absorption; two routes from the food canal to the circulation; changes of digested nutrients into nutrients of the blood; storage of a nutrient (glycogen) by the liver; storage of fats and proteids before their final use by the cells; advantages of storage of nutrients; differences between alcohol and foods in their passage into the blood and to the cells.

5. *Cell activity.* Breaking down and rebuilding of the protoplasm; formation of new cells in the blood and in certain of the tissues; adaptability of proteids to rebuilding the protoplasm; oxidation, the essential process in supplying the body with energy; comparison of slow and rapid oxidation as seen in combustion and decay; kinds of energy used by the body; evidence that oxidation takes place in the body and that this is the source of our energy; compare body with a stove with respect to supplying energy (heat) by oxidation. Health in relation to the energy supply of the body; results of exhaustion of one's energy; how body may be trained to produce too little heat; general hygienic conditions to be observed if one would increase the amount of his energy.

6. *Excretion.* Waste and how formed; organs that remove waste from the body. *Lungs:* Waste removed by the lungs. *Kidneys:* Structure and connection with the large blood vessels and the bladder; wastes separated by them. *Skin:* Structure and functions; sweat glands and wastes which they separate; work of skin in regulation of body temperature and in protection from disease germs. *Liver:* Structure and functions; wastes separated by it; connection with the circulation and with the food canal; importance of work of excretion (compare with the work of admitting materials into the body). *Hygiene of excretion.* Habits of living that aid in the removal of waste; effect of exercise, cleanliness, overeating and the eating of an excess of proteids; effect of alcohol upon liver and kidneys; care of skin; treatment of simple skin wounds; causes and prevention of blood poisoning, including lockjaw.

THIRD QUARTER. 1. *The Skeleton:* Properties and composition of the bones and arrangement in the skeleton; structure and kinds of joints; study of important bone groups with reference to size and shape of bones and purpose of the group. Importance of preserving the natural form of the body; special hygiene of the spinal column; skeletal deformities of school children; effect of improper positions in sitting, standing, and sleeping. Treatment of sprains and dislocations; special hygiene of skeleton in youth and old age.

Muscular System. Kinds of muscular tissue and where found; structure of a muscle organ; tendons and perimysium, structure, arrangement, and use of the involuntary muscle, arrangement of muscles to bring about the opposing movements of the lymph and the blood; effects of overexercise; precautions.

2. *The nervous system.* General view; location and structure of main division; the neuron or complete nerve cell (show parts by diagram); massing of the neurons to form the ganglia and nerves, the brain and the spinal cord; arrangement of the neurons to form nerve pathways through the body; properties that enable the neurons to be stimulated and that in turn enable them to stimulate other bodily structures; nervous impulses, direction of, in afferent and efferent neurons; nature, cause, and purpose of reflex action; voluntary action, compare with reflex action, studying familiar examples; nature and purpose of automatic or secondary reflex action; general function of the nerves, ganglia, spinal cord, and cerebrum. Effect of alcohol upon the brain and mind; effect of tobacco upon the nervous system of the young; hygienic value of cheerfulness and harmonious relations with one's fellows; habits, good and bad; importance of self-control.

3. *Sensations.* The means for the intelligent direction of the body; nature, cause and purpose of sensations; sense organs and sensation stimuli; structure and

location of the sense organs of touch, temperature, taste, and smell; action of stimuli through these organs upon terminations of neurons and transmission by the neurons of impulses to the brain; advantages to the body of the sensations of touch, temperature, taste and smell.

4. *Ear and Larynx.* Sound waves as sensation stimuli. Structure, location and method of vibration of the vocal cords; production and purpose of speech. Study ear as instrument for the detection of sound waves; transmission of sound waves from bell to the internal ear; excitation of terminations of auditory nerves and passage of impulses to the brain; purposes of pinna, auditory canal, membrana tympani, bridge of bones, eustachian tube, air in the middle ear, and liquid in the internal ear. Hygiene of the ear; effect of rough handling; temporary deafness from ear wax and relief of same; testing of hearing of school children.

5. *The Eye.* Light waves as sensation stimuli; study eyeball as an instrument for focusing light from objects upon a sensitive nervous surface; function of cornea, iris, crystalline lens, retina, coats of eyeball, ciliary and external muscles, and conjunctiva; accommodation and regulation of the amount of light entering the eyeball; lachrymal apparatus and protection of the eyes. Simple rules for using eyes; necessity for cleanliness; removal of irritating objects from the lids; defects in focusing and their remedy; relation of eyestrain to nervousness, headache, sleeplessness and general debility; dangers from going without glasses when they are needed.

6. *General Hygiene and Sanitation.* Location of dwelling with reference to outbuildings, drainage, bodies of water, etc.; water supply and sewage; general methods by which disease germs spread and find entrance into the body; methods of communication of typhoid fever, malaria, tuberculosis, diphtheria, scarlet fever, measles and smallpox; vaccination and antitoxins; common accidents and their prevention; hygienic value of temperance and sobriety.

FOURTH QUARTER.—Pupils in our public schools must be instructed in the elementary principles of road-making.

1. *What is a road?* Teach the origin and extension of roads. Explain the "Trail" or "Foot-path" of the pioneers and how they were evolved by demand of traffic into the wagon earth-road, the corduroy road, the plank road, charcoal road, gravel road, rock road, and on to the brick and concrete roads of today. What are state roads, county roads, neighborhood roads?

A public road is a highway of travel. The land on which it is located belongs to the public. Some roads are owned by individuals or corporations. Roads are usually located on section or quarter section lines. Plat your congressional township and school district, and locate the roads. Calculate the number of acres in the roads of the township; of the school district. Owners on either side of a proposed road often give half of the land for the road. Give the legal processes necessary in locating a new road; include the petition, the duties of the County Court, the County Surveyor and the Road Overseer (State Road Law). Read in Roman History about the Appian Way, and how it was constructed. The Romans built roads that are in use today. The older countries of Europe have far better roads than this country has. What determined the location of roads in early settlements of Missouri? In these early settlements, the most level route was selected with little regard for boundary lines. For this reason some of the old roads are the best.

2. *Value of good roads.* What permanently improved roads mean to a state, a county, a rural community. Show that good roads are an absolute necessity and must be built as a church or school house must be provided for the public good.

Good roads exert great influence on the community. With them better schools, better churches, more money and more business are possible. The work of country schools depends largely on the condition of the roads. When roads become very

bad many children are prevented from attending school, and sometimes the school is closed on this account. For this reason many people leave their farms and move to town. Regular church attendance in the country is dependent on good roads. Social life is also influenced by the condition of the roads. In many localities the women and children are cut off from any associations for weeks. Literary societies, debating clubs and reading circles are impossible at certain seasons on account of bad roads. In many communities the farmer spends too much of his time in taking his produce to market. With good roads he could accomplish more in less time. The rural free delivery is exerting a beneficial influence upon road conditions. The roads must be passable at all seasons before a route is established. With more good roads, this system will be extended, and with it the Department of Agriculture will send the Daily Weather Reports, which will bring useful information to the farmer. Every step taken to make the way easy to school, to church, to postoffice, to market and to the homes of neighbors is a step toward ideal life in rural communities.

3. *What makes a good road.* A road to be permanently good must have a hard and smooth surface, regardless of weather, so that it may be easily traveled at all seasons. A dirt road is one that uses the natural surface of the ground with no other attempt at improvement, except draining and grading. In locating roads, steep grades should be avoided. The grade or rise in a road should never be more than seven (7) feet in one hundred. If the steepness of the grade increases, the weight of the load must decrease. On a rise of one foot to the hundred, a good horse can pull 900 pounds; on a rise of ten feet to one hundred, he can pull only 250 pounds. These figures show how important it is to avoid very steep grades. With a carpenter's level and measuring line, determine the grade of some of the steepest hills in the roads of the neighborhood, and calculate how much a good team can pull up each. Teachers should take great pains to show pupils how to make such measurements and should insist on accurate calculations.

4. *Road Drainage.* Good drainage is as important as good grading. Wet spots soon become mud holes, which prevent hauling heavy loads. Wet spots should be tiled or underdrained. The surface water should be carried off by open ditches, which may be made at either side of the road. The center of the road should be higher than the sides, in order to cause the surface water to run off. Water is the chief cause of bad roads, whether it is upon the surface or in the soil. Weeds should not be allowed to grow in the road, because they make the road bed soft and yielding. When cut or allowed to die in the fall their roots hold moisture. A good road must have a firm bed; for this purpose neither mud nor sand will answer. Road beds are rendered firm in several ways. A common method is by graveling. Since loose gravel makes a heavy road, it should be packed with a roller. Large, unsightly ditches may be prevented by putting in a covered tile drain on each side of the road, and leaving a shallow ditch above it. Gravel should be screened before putting it on roads; the coarser portion should be put down first and the finer on top. What is tiling? How made? How used? Observe some good artificial drainage, and write a description of it.

5. *Improved roads.* Tell of the several earth roads, wooden roads, corduroy roads, charcoal roads, "Turnpike" road. Tell of the old toll system and for what the toll was used. Tell about tramways, gravel roads, shale roads, shell roads, brick roads, concrete roads. How is concrete made? What are the proportions of cement, sand, rock and why? What are binders and fillers? Oil as a preservative and dirt arrester in roads and streets.

6. *Good Dirt Roads.* How to make the best dirt roads is the great road problem in Missouri. Roads were worked in earlier times with picks, shovels and hoes; later with plows and scrapers; following these came the grader. The grader is an expensive machine, and, on account of the number of horses required to draw it,

it is not easily managed. Mr. D. Ward King of Maitland, Mo., recommends dragging. The drag is made by pinning the two halves of a split log together, thirty inches apart, both flat sides facing the team. An old wagon tire should be fastened on the front piece and a chain or heavy wire fastened eighteen inches from each end with which to draw it. The team should be so hitched as to drag the dirt towards the middle of the road. Some of the advantages of dragging are: the road is made smooth and water flows off easily; the old trail is destroyed and a new one is made on a different part of the highway; ruts are filled up and weeds are killed while small. The drag should be used after a rain. The road bed will soon become hard and smooth. A half mile of road can be worked in two hours by a man and one team; hence, the method is a very inexpensive one. Where the method of dragging has been employed it has proven very satisfactory. Get some patron to make an experiment of road dragging, and have pupils observe results, and make note of every point of advantage or disadvantage. Write to Secretary Geo. B. Ellis, Columbia, Mo., for bulletin on Road-making. Ravenel's Road Primer, McClurg & Co., will be helpful to teachers and is a good book for the school library.

MANUAL TRAINING.

Since the people are generally demanding that the schools be made more efficient in the practical preparation of boys and girls for their life work, and that what has been done for the few who go into law, medicine, ministry or teaching, or literary work, should be done for the many who go into the store, shop or bank, or onto the farm or into the home, it has become necessary to add certain subjects to our course of study. Nature study and agriculture are now required in every school. Many rural schools are demanding that a place be made for manual training, sewing and cooking. It is hoped that the meager outlines on these latter subjects will encourage a good movement, will be helpful to those teachers who are doing such work and will show the possibility of this work even in a one-room school. Only a limited amount of this very valuable work can be done except in consolidated schools. Work in these subjects will usually be done in addition to the regular seventh and eighth grade work. But it may well be substituted for the eighth grade work in geography, physiology or arithmetic. A grade in any one or more of these optional subjects will be accepted in lieu of a grade in the eighth year's work in a corresponding number of the three subjects just mentioned.

Equipment. Bench and vise; crosscut saw; rip saw; set of auger bits; brace; hand drill No. 2; countersink; sloyd knife; foot rule; one-inch firmer chisel; one-half inch firmer chisel; one-fourth inch firmer chisel; one inch gauge; spoke shave; jack plane; block plane; hammer; try square; marking gauge; screw driver; combination oilstone; bench hook; bench brush; planing support; winding sticks; dowel bits one-fourth inch and one-half inch.

Cost of Equipment. The above, exclusive of the bench and vise, can be secured for \$10 or \$12. Some carpenter in the neighborhood can build a suitable bench for a reasonable sum. A first-class iron rapid action vise can be bought for \$3.00.

Work Shop. Some rural school buildings are so constructed that a suitable place for this work can be easily provided, but in other cases there is much difficulty. The following plans are possible:

1. Make use of a shed (built for this work, if necessary).

2. Make use of the basement. (It would be well for all new school houses to be provided with basements. If necessary, excavate a basement for this purpose.)

3. Use part of the cloak room.

4. If there is no objection and the room is sufficient, the work may be done in one corner of the school room. Choose a place near a window.

Plan. In most rural schools the number of boys desiring this work is small; possibly bench room for only one boy at a time can be provided and tools for only one boy. The work can then be done by using the hour before the opening of school in the morning, the hour after the closing of school in the afternoon and the noon hour. This gives three hours a day, or fifteen hours a week. Thus seven boys can have two hours each a week, or five boys three each per week.

Suggested Objects to be made. Peck crate; window stick; target; bird house; swing board; bread board; coat hanger; coat and hat rack; tool rack; stirring paddle; broom holder; pen tray; wind-mill; milk stool; sleeve board; book rack; towel roller; taboret; plate rack; umbrella rack; picture frame; hatchet handle; swingle-tree; sled; saw buck; chicken coop; chicken feeder; egg tester; snow shovel; garden marker; dog kennel, etc.

NOTE. Only teachers who are prepared to teach this work should undertake it.

Reference. Essentials of Woodworking, The Manual Arts Press, Peoria, Ill.

SEWING.

This course is not a required part of the Elementary Curriculum, but is suggested as elective work. Many teachers will be able to do more work than is here suggested. The work may be given.

1. One lesson a week after or before school during the sixth, seventh and eighth years.

2. One or two lessons a week during school hours, if time permits in the same grades. The work should be constructive and connected with the home, hence the course is not laid out by lessons but left to be arranged by the teacher. Some of the work may be done at home according to plans and directions given by the teacher.

Sewing should be made practical as well as educational. This can be done by applying it to the home needs. The pupil should be given a high ideal and should strive to reach it. *Poor careless work is absolutely of no value.* The teacher's preparation for the lesson consists in doing each exercise—in this way difficulties are foreseen. The child should have a mental picture of what she is undertaking for by this much time is saved, the work becomes more independent, and better results are obtained. Every effort should be made to encourage original design and application of stitches. Do not try too many articles; for excellence of work and some technical skill are more to be desired.

Equipment. Pin cushion, thimble, needles, scissors, thread, paper of pins, tape measure, cloth and paper. Pupils can bring these things from home.

Preliminary. Use of tools; use of thimble; method of holding scissors, threading needle, knotting thread. Position of body and method of holding cloth.

Stitches. Basting, running, hemming, blanket, back, feather. Also button hole, patching and darning.

Application. As the above stitches are learned apply them to making such

articles as the following: Sewing bag, tea towel, dust cloth, apron, doll dresses, pin cushions, iron holders, pillow slips, children's clothing. Later more difficult articles of clothing may be undertaken.

Care of clothing.

- a. Mending, darning, pressing, brushing and storing clothing.
- b. Use of gasoline, chalk and acids in taking out grass, ink, rust or grease stains.
- c. Laundering. Kinds of cloth that can be laundered; effect of soap; hard and soft water; boiling, ironing.

NOTE. Only teachers who are prepared to teach this work should undertake it.

Reference. Goodwin's "Course in Sewing," Frank D. Beattys & Co., 225 Fifth Ave., New York.

COOKING.

This subject as manual training and sewing is optional. It is unfortunate that all schools are not so situated that they can do this very important work. It is hoped that soon the way will open for the introduction of this subject into all rural schools. The sewing work should precede the work in cooking, as it is more easily taught and requires less equipment and can be learned by younger children. The cooking should be given in the seventh and eighth grades. One period of from 75 to 90 minutes per week should be given to this work. By closing school at 3:15 or 3:30 on cooking days, the work may be done after school. (The work of the subjects omitted may be done in four periods per week. Note that the last hour of the day has a light program.)

Equipment. Little equipment is necessary for many of the problems. Such as bread work can be carried on at home following directions given at school. Some cooking experiments may be made on the top of the heating stove. A one-burner coal oil stove, with portable oven, would be sufficient for many cooking experiments.

The most efficient work can be done when a separate room is arranged for the cooking and each pupil provided with an individual equipment, and much work is done at school.

The essentials of a cooking equipment, in addition to stoves and tables, are: 1 measuring cup; 1 tablespoon; 2 teaspoons; 1 paring knife; 1 fork; 1 stew pan; 1 kettle with lid; 1 baking cup; 1 dish pan; 1 rinsing pan; 1 granite pan; 1 strainer; 1 bowl; 1 plate; 1 skillet; 1 wooden spoon; 1 spatula; 1 double boiler; 1 baking pan; 1 pie pan; tea towels, dust clothes. All of these utensils can be contributed by the homes in the community, but it is better that they be purchased and be school property. A few of them that are used only occasionally may be brought from home by the pupils for the time needed.

Method. The teacher must insist upon the formation of such habits, as neatness, accuracy, system, cleanliness, etc. The teacher must use her judgment as to the amount of work to be given each lesson, and must suit the practical work to conditions. Make the work practical, but never lose sight of the causes and whys, for as the novelty wears off, it is only the scientific turn of mind that relieves the work from the drudgery.

Outline of Course.

General Topics. The following outline is suggested from which one or two years work may be selected. All points mentioned are important. Do what you can.

1. Study of different food principles, carbohydrates, proteins, fats, water, minerals.
2. Study of effect of heat upon the different food principles.
3. Study of digestion of food and its use to the body.
4. Study of cleaning and care of dishes, utensils, linen, etc.
5. Study the house and its surroundings, location and general. Visit well-planned houses and study the plans.
6. Study arrangement and care of bedrooms and the dining room.
7. Study the arrangement of the kitchen, pantry, dairy, cellar, garret, and other store rooms.
8. Home Sanitation:
 - a. Discussion of water, air, care of garbage and waste.
 - b. Discussion of construction and care of stove, fire.
 - c. Sweeping and dusting, bacteria.
9. Study of fermentation, yeast, bacteria.
10. Marketing, cost of foods and keeping accounts.
11. Planning well-balanced meals.
12. Invalid and infant feeding.

Suggested Lessons:

1. Discussion of utensils, heat production, building fires, boiling water. Exercise.—Make coffee.
2. Study composition of foods, pure and impure foods, effects of sunlight or air on food, on people. Application.—Ventilation of school room and bed room. Care and making of beds.
3. Study of water. Uses to the body. Temperature for boiling and freezing. Boiling water to kill bacteria. Exercise.—Make lemonade or boil water.
4. Study of Starch. Source, appearance, composition of the potato. Exercise.—Prepare boiled or baked potatoes.
5. Study of Starch. The history, cultivation and uses of the potato.—Prepare escalloped potatoes.
6. Study of Starch. Effect of heat on starch. Time for cooking starchy foods. Test of starch. Geography of rice. Cultivation of rice.—Prepare boiled rice.
7. Study of Starch. Composition of cereals. Food value of starch. Digestion of starch. Prepare oatmeal, cream of soup, white sauce or macaroni.
8. Christmas Lesson. Study sugar, sauces. Food value of sugar. Effect of heat on sugar.—Make brittle candy.
9. Christmas Lesson. Digestion of sugar. Make fudge.
10. Study of proteins. The egg, its structure, uses and composition.—Prepare scrambled eggs.
11. Study of proteins. Effects of heat on protein. Tests for fresh eggs. Food value of eggs.—Prepare soft boiled eggs.
12. Study of proteins. Effect of beating air in egg white. Preservation of eggs. Marketing.—Make omelet.
13. Study of proteins. Milk, its composition. Water, fat, casein, sugar, mineral. Care of milk.—Prepare whipped cream or custard.
14. Study of proteins. Milk. Preservation of milk. Bacteria. Effect of acid, alkali and heat on milk.
15. Study of water and cleaning. Use of mineral water. Dirt and disease. Dusting, sweeping and mopping.
16. Study of fat. Kinds of fat. Butter.—Make butter.

17 Study of fat. Effect of heat on fat. Deep fat frying. Digestion of fat.—Prepare croquettes.

18. Classification of animal food. Cuts of beef.—Prepare steak, beef tea.

19. Study of pork. Lard and cuts of pork. Prepare pork chops. Uses of the tougher and cheaper cuts of beef. Effect of heat protein.—Prepare a beef roast.

20. Construction dishes. Gelatine, sources of, and uses of food.—Prepare gelatine moulded with fruit.

21. Study of leavening agents. Baking powder and cold water, and hot water.—Prepare muffins.

22. Study of leavening agents. Sour milk and soda.—Prepare biscuits.

23. Study of fermentation. Yeast growths. Souring. How to govern the forces of nature.—Prepare bread, rolls, etc.

24. Study fermentation. How to govern the heat of oven. How to tell good bread.—Bake bread.

25. Household moulds.—Preservation of fruits. Canning fruit.

26. Infant feeding.—Prepare gruel. School lunches. Setting and waiting on the table.

27. Freezing mixtures.—Prepare ice cream. Preparation of egg and milk dishes for invalids.

28. Study of waste, garbage. Household pests. Flies, mosquitoes, roaches and bugs. How get rid of.

29. Luncheon for picnics. Have a school picnic and prepare luncheon for.

NOTE. Only teachers who are prepared to teach cooking should attempt this work.

Reference. "Element of the Theory and Practice of Cookery"—Williams & Fisher—McMillan Co., Chicago.

GAMES AND PLAY.

1. *Hygienic Value.* Food air, sunshine, and exercise are the essential factors of life and growth. Outdoor play supplies the last three. Play calls into action the large groups of muscles, stimulates the organic growth of the heart, lungs and all the viscera and gives the body a symmetrical and harmonious development.

2. *Mental Training.* Games have a positive educational value. The clumsy boy or girl who is slow to see, to hear, to observe and to act, is transformed in a few weeks. The sense perceptions are quickened. He runs more easily, dodges more effectively, sees the ball more quickly, handles himself with less effort. Mind training and muscular training can not be separated.

3. *Will Training.* The development of the will by games and plays is most important. Courage becomes prominent in accepting a dare or in taking a risk. Determination is pictured upon the faces of those trying to win a race or a game to catch an opponent, or elude a pursuer, or to reach a coveted goal. The most valuable training of all is that of inhibition—the power of self-restraint and self-control.

4. *Moral and Social Training.* The moral and social value of play is important. To learn to play fair, to observe rules, to choose between right and wrong, and to act quickly upon this knowledge are vital factors in character building. Games in which team work is necessary are important for rural schools. To teach children to co-operate, to take defeat without discouragement.

ment, to win success without elation and to yield to the inevitable with good nature are lessons of real life value.

The list of games below may be of value to the teacher. Select, or permit pupils to select from the list:

Games. Cat and Mouse; Hide and Seek; Puss in the Corner; Witch in the Jar; Tag; Drop the Handkerchief; Have you any Sheep; Hawk and Chickens; Dare Base; Black Man; Run Sheep, Run; Follow the Leader; Going to Jerusalem; Hoop Rolling; Hoop Racing; Hoop Encounters; Relay Race; Faba Gaba; Hunt the Ring; Blind Man's Buff; Blackboard, Hopping, Single, etc., Ruth and Jacob; Potato Race; Bird, Beast or Fish; Magical Mucis; London Bridge; Town Ball; Base Ball; Two-old Cat; Cross Tag; Fox and Geese; Basket Ball; Bounce Ball; Three Deep; Anthony Over; Wood Tag; Hill Dill; Catch and Pull; Hole Ball; Field Ball; Tennis; Marbles; Pitching Horseshoes; Prisoner's Base; Last Couple Out; Mulberry Bush; Round and Round the Village; Did you ever See a Lassie? Bean Bag Games; Antagonistic Games for Boys; Rooster Fight; Tug of War; Indian Wrestling.

Books Suggested for Teachers.

Education by Games and Plays.—Johnson-Ginn & Co.

Games, for Playground, Home and School.—Bancroft-McMillan Co.

Play.—Angell-Little, Brown & Co., Boston.

150 Gymnastic Games.—Alumni B. N. S. G.—Geo. Ellis & Co., Boston.

200 Indoor and Outdoor Games.—Kingsland-Doubleday, Page & Co., New York.

MORALS AND MANNERS.

In the following courses will be found an abundance of material for use in impressing lessons in ethics and good manners. No attempt has been made to arrange the topics in logical order. The work is arranged by quarters to indicate how much should be undertaken in a given time in order to cover the course in two years. The teacher can arrange the topics to suit conditions in the school. The lessons should be given to the entire school. The first year's course should be given in 1911-12, and the second year in 1912-13 and each alternate year thereafter.

First Year.

FIRST QUARTER. Obedience. (1) Obedience is submission to proper authority. (2) It should be required of all. (3) Progress depends on it. (4) It should always be real, not feigned. (5) It should be: (a) prompt, (b) cheerful, (c) implicit, (d) faithful. (6) Obedience to parents, to teachers and others in authority, to laws generally, to conscience, to God.

Honesty. (1) Honesty accords justice to all. (2) Honesty is more important than wealth. (3) The right to property must be recognized. (4) The teacher's example. (5) Honesty in little things. (6) Honesty in school and out of school. (7) Honesty is right. (8) "Honesty is the best policy." (9) Honesty should be based upon *principle* rather than *policy*.

Truthfulness. (1) It is the basis of faith which makes the work of the world possible. (2) Children are naturally truthful and confiding. (3) Lying is always wicked. (4) All should be truthful, both in words and actions. (5) Keeping one's word. (6) Distinction between a lie and an untruth. (7) Repeating what one

does not know to be true. (8) False statements and exaggerations. (9) Giving a wrong impression, a form of falsehood. (10) Telling falsehoods for fun.

SECOND QUARTER. *Self-Control.* Needed for growth of character, of greater value than pleasure, fame, power or wealth. (2) Self-control is a duty one owes to self. (3) Control of temper. (4) Anger, when right. (5) "Think twice before you speak." (6) Self-restraint when tempted. (7) "Bear and forbear." (8) Rule yourself absolutely.

Kindness to Others. (1) What kindness really is. (2) Its significance in character. (3) Kindness is contagious. (4) Kindness helps intellectual development. (5) Kindness to all: (a) To parents, (b) to brothers and sisters, (c) to associates, (d) to aged, infirm, unfortunate or helpless. (6) Forms: (a) sympathy, (b) deference and consideration, (c) helpfulness, (d) charity, (e) condemnation of cruelty and injustice.

Kindness to Animals. (1) This, too, springs from sympathy. (2) Only vicious persons delight in causing any creature to suffer. (3) We should be especially kind to the animals which serve us. (4) The cruelty of robbing birds nests and killing birds. (5) Avoid cruelty in killing of animals that harm us. (6) Avoid cruelty in killing animals for food.

Good Manners. (1) Needed in association with others; promote comfort of others and advantage to self. (2) Good manners a habit; good manners at home; good manners in school; when a visitor or a guest; in public places. (3) Salutations on the street or in public buildings. (4) Politeness to strangers. (5) Avoid trifling in serious matters.

THIRD QUARTER. *Politeness.* (1) Definition. (2) The good it does. (3) Its relation to home life. (4) Helps in securing politeness. (5) Politeness at school; to guests and visitors.

Fidelity in Duty. (1) Idea of obligation, intuitive. (2) Conscience to be obeyed. (3) How conscience is quickened. (4) Faithful performance of duty to parents. (5) Duty toward brothers and sisters—older to assist younger, etc. (6) Duty to the poor and unfortunate. (7) Duty to God.

Self-respect. (1) It is a good opinion of worthy qualities in one's self—based on conscious moral worth. (2) It requires that one be worthy. (3) It is not inconsistent with humility. (4) It is not self-admiration. (5) It results in personal dignity. (6) Distinction between self-love and selfishness. (7) "Be not wise in your own conceit."

Prudence. (1) The moral man wishes to be right; the prudent man, to be safe. (2) Prudence not always wisdom. (3) Prudence in speech and action. (4) Prudence may be misunderstood. (5) "Judge not, that ye be not judged."

FOURTH QUARTER. *Health.* It is a condition of wholeness, a state of soundness or freedom from defect or disease. (2) Ill health hinders usefulness and happiness. (3) To preserve health is a plain duty. (4) Habits that impair health are foolish as well as sinful. (5) "What a man sows that shall he also reap." (6) The body never forgets or forgives its abuse.

Nobility. (1) Chief element in it is goodness. (2) It requires manliness, magnanimity and generosity, self-denial and self-sacrifice for others. Bravery in helping or saving others, apologies for injuries or injustice.

Respect and reverence. (1) These imply proper estimate and treatment of others. (2) Lack of respect and reverence, a sure sign of littleness. (3) Proper respect and reverence for parents, for teachers, for those who have done distinguished service, for those in civil authority.

Gratitude and Thankfulness. (1) Definition. (2) They show a good disposition. (3) We should cultivate these virtues. (4) Gratitude and thankfulness to all benefactors. (5) To God, the Giver of all good.

Second Year.

FIRST QUARTER. *Confession of Faults and Forgiveness.* (1) This means an honest acknowledgment of a fault and a willingness to amend a wrong. (2) It is God-like to forgive. (3) We should be ready to forgive those who, having wronged us, make confession. (4) Generosity should govern our dealings with the faults of others. (5) Frankness and candor. (6) Confession is manly.

Honor. (1) Honor shows a high sense of justice. (2) Popular opinion of honor may be wrong. (3) One should endeavor to be worthy of honor. (4) There should be a steady purpose to honor one's family and friends.

Temperance. (1) Moderation in use of things helpful and avoidance of things harmful. (2) Moderation in the indulgence of appetite in things not harmful. (3) Abstinence from that which is injurious. (4) Dangers in the use of alcoholic liquors, courage to resist social temptation. (5) Injurious effects of tobacco on growing boys. (6) Serious effects of cigarette smoking.

SECOND QUARTER.—*Habits.* (1) Good habits and bad. (2) Bad habits are more easily formed than broken. (3) How to break a bad habit. (4) Habits that injure health, habits that destroy reputation, habits that waste money, habits that take away self-control. (4) Gambling. (5) Habits offensive to others.

Language. (1) Language is vocal expression of thought—an index to character. (2) Significance of borrowed language. (3) Profanity, foolish and wicked. (4) Obscenity, base and offensive. (5) Slang, vulgar and impolite.

A Good Name.—(1) Its great value. (2) How a good name can be obtained. (3) Gaining a good name when young. (4) Keeping a good name. (5) Keeping good company. (6) Reputation and character.

Love. (1) The chief motive in life, leading to unselfish service. (2) It ennobles character—"God is Love." (3) We should cherish love for parents and other members of family. (4) Love for teachers and all benefactors. (5) Love for one's neighbor—"Thou shalt love thy neighbor as thyself."

THIRD QUARTER. *Economy.* (1) Extravagance and parsimony both wrong. (2) Economy is temperance in expenditure. (3) Youth needs encouragement to save. (4) Economy becomes a habit. (5) Saving in early life will insure competency and comfort in old age. (6) Duty to save a part of one's earnings. (7) Charity—"No man liveth unto himself."

Patriotism. (1) Always regarded as a virtue. (2) Great need of patriotism in a republic. (3) The story of our country should be so taught as to command respect. (4) How to develop patriotism. (5) Respect for our country's flag. (6) Respect for its rulers. (7) Reverence for our forefathers. (8) Regard for the honor and good name of America.

FOURTH QUARTER. *Courage.* (1) An essential element of character. (2) Moral courage sustained by health and strength. (3) Discouragement harmful. (4) Cowardice disgraceful. (5) True courage—daring to do right and to defend the right. (6) False courage—daring to do wrong or to defend wrong. (7) Courage in danger or misfortune. (8) Heroism.

Humility. (1) An evidence of greatness. (2) True greatness not blind to one's own faults. (3) Modesty becoming to the young. (4) True humility, not servile or time serving.

Civil Duties. (1) Civil duties a division of social duties. (2) Government is necessary. (3) Government requires law. (4) The good citizen obeys the law. (5) The good citizen aids the enforcement of law. (6) Faithfulness in office, fidelity to an oath. (7) Duty to exercise right of suffrage. (8) Honor and dignity of citizenship.

APPROVAL OF RURAL SCHOOLS.

The first plan for approval of rural schools was promulgated in 1909. It led at once to increased interest, on the part of many communities, in the grading of the school, in attendance, and in bettering buildings and grounds. Nearly three hundred schools have been placed on the approved list, and many others are taking such steps as will lead to their approval in the near future.

Before a school will be approved it must comply with the following requirements:

- (1) The term must be at least eight months in length.
- (2) The teacher must hold a certificate higher than a third grade county.
- (3) The salary paid the teacher must be at least forty dollars per month.
- (4) The board must have complied with the library law, section 8186, R. S. 1909.

- (5) The State Course of Study.
- (6) The organization and classification of the school must be definite and systematic.

- (7) The instruction and discipline must be satisfactory.
- (8) The school buildings, grounds and outbuildings must be adequate, cleanly and sanitary.

- (9) Room must be heated by other means than radiation.
- (10) The teacher must be a regular attendant at county and township meetings.
- (11) A satisfactory program of recitation and study periods must be posted conspicuously.

- (12) A total credit of 80 points out of the possible 100 must be earned.

It will be noted that Nos. 9, 10 and 11 are new requirements. It is believed that every teacher of a school worthy of approval will see the wisdom of these requirements and be able to secure the co-operation of the board in meeting all the requirements of the list.

It is well that we move constantly forward and look toward higher ideals. It will not be long until every standard rural school in the State will be heated by a system such as the Smith or Waterbury. For the present we can only require that the stove be placed in proper position and jacketed.

When new school houses are built, separate cloak rooms should be arranged for boys and girls.

All new books purchased for the library should be from the lists given after each subject in the Course of Study. Every good library should contain not only these books, together with supplementary readers and necessary reference books, but also the books of the Pupils Reading Circle.

Below is the score card. The teacher will do well to study it carefully that her school may be brought up to the standard:

Scale of points.	Possible score.	Points allowed.
CONDITION OF SCHOOL BUILDING—20 points.		
<i>Outside</i> , well painted, well preserved.....	4	.....
<i>Inside</i> , walls plastered, painted or papered, and clean.....	3	.....
<i>Light</i> , windows arranged properly and provided with shades....	4	.....
<i>Ventilation</i> , provisions for lowering windows at top, etc.....	4	.....
<i>Floor</i> , tight, smooth and clean.....	2	.....
<i>Heating</i> , by furnace or a good stove properly located and jacketed	3	.....

Scale of points.	Possible score.	Points allowed.
APPARATUS AND EQUIPMENT OF BUILDING—17 points.		
<i>Black board</i> , smooth surface of slate, liquid slating or painted board, easily reached by smallest pupil.....	2	.....
<i>Desks</i> , well preserved and well adapted to the sizes of children..	3	.....
<i>Teacher's desk and chair</i> , suited to use.....	1	.....
<i>Bookcase</i> , well made and provided with lock and key.....	2	.....
<i>Pictures</i> , carefully chosen and arranged.....	1	.....
<i>Maps</i> , of the county, State, U. S., etc., in good condition.....	1	.....
<i>Globe</i> , carefully selected and in good condition.....	1	.....
<i>Charts</i> , adapted especially to beginning grades.....	1	.....
<i>Library</i> , books chosen so as to meet needs of pupils (at least dictionary)	4	.....
<i>Broom, erasers, individual drinking cups, etc.</i> , in good condition	1	.....
GROUND AND OUTBUILDINGS—13 points.		
<i>Grounds</i> , well shaded, drained, fenced and good size, neatly kept	4	.....
<i>Cistern</i> , good walls and top, with pump and conveniently situated	5	.....
<i>Outbuildings</i> , strongly built, properly situated, nicely painted and well kept	4	.....
COURSE OF STUDY AND ORGANIZATION—25 points.		
<i>Course of study</i> , State or county followed.....	5	.....
<i>Graduation, Uniformity</i>	5	.....
<i>No. of recitations</i> , not exceeding 24.....	3	.....
<i>Quarterly and final examination questions used</i>	2	.....
<i>Agriculture</i> , taught in higher grades.....	3	.....
<i>Attendance</i> , regular, prompt	4	.....
<i>Tardies</i> , few or none.....	1	.....
<i>System of records</i> , well kept and accurate.....	2	.....
TEACHER, THE—25 points.		
<i>Certificate</i> , second grade or higher.....	3	.....
<i>Salary</i> , \$40 or more per month.....	2	.....
<i>Associations</i> , county, township and state attended regularly....	2	.....
<i>Instruction</i> , careful and accurate.....	8	.....
<i>Discipline</i> , kind but firm.....	6	.....
<i>Reading Circle</i> , member of, for present year.....	2	.....
<i>Reports</i> , to district clerk and Co. Supt. promptly made.....	2	.....
Total	100	.....

Note—The Course of Study for high schools is published in a separate bulletin. This may be had free of charge by sending a postal card to Wm. P. Evans, State Superintendent of Public Schools, Jefferson City, Mo.

REVISED LIST OF MISSOURI LIBRARY BOOKS. 1911.

SELECTED BY THE STATE LIBRARY BOARD, FROM WHICH THE
FIRST ONE HUNDRED VOLUMES IN PUBLIC SCHOOL
LIBRARIES MUST BE SELECTED.

State Library Board.

Wm. P. Evans, President.....State Supt. of Public Schools
J. A. Whiteford.....City Supt. St. Joseph Schools
F. D. Tharpe.....Asst. Supt. of Kansas City Schools
C. C. Thudium.....City Supt. of Fredericktown Schools
T. J. Walker.....Co. Supt. Cass Co. Schools

SCHOOL LIBRARIES, CHAPTER 73, ARTICLE IV.

Section 8184. Library Board Created.—There is hereby created a State Library Board to consist of five members, four of whom shall be appointed by the State Board of Education to serve for four years and until their successors are appointed. The State Superintendent of Schools shall be a member and ex-officio chairman.

Sec. 8185. Board shall Select, Classify and Recommend Books.—The State Library Board shall select, classify and recommend a list of suitable books for school libraries, supplementary reading and school reference books. Said list shall contain not less than forty suitable books to supplement the regular school room work in each of the following lines: Reading, literature, history, geography and nature study, or practical agriculture. They shall enter into contract with the publishers of the selected books to furnish them, transportation charges prepaid, at the lowest possible cost to the districts: Provided, that said list may be revised every two years by said Board. It shall be the duty of the State Superintendent of Public Schools to publish and distribute to the district clerks of the State a classified list of selected books, setting forth contract prices of each.

Sec. 8186. School Boards to Set Aside Funds to Purchase Books.—For the purpose of purchasing school libraries, supplementary and reference books, district boards of directors shall set aside, out of the levy made for incidental purposes, not less than five nor more than twenty cents per pupil enumerated in the district each year, which shall be spent under the direction of the Board in purchasing books from the list selected: Provided, that books other than those selected may be purchased after one hundred volumes have been purchased from the selected list of library books.

COMMENTS BY STATE SUPERINTENDENT.

Many teachers have found it difficult to make selection of books from the list because of the wealth of choice. For this reason the Library Board has cut down the number of titles. Some teachers may miss old friends from the list, but it is hoped that they will be reconciled when they realize that the inexperienced will have comparatively plain sailing. Some books in the list and in the Course of Study have been emphasized with stars to show their greater importance. Each teacher should look through the book carefully and find out how many of these indispensable books are missing from his library and make haste to supply the need. There are certain indicated books that every teacher must have in his own library to do really effective work. They should be secured as soon as possible.

It is now generally conceded that the school must have a library to round out its work. The books chosen should promote a taste for good reading, should interpret the geography, should enrich the history, should raise the moral level, should provide amusement, instruction and inspiration and furnish a tie between the school and the community. There are few districts that might not add \$25 worth of books to their library every year. Such an outlay would be of priceless value to the neighborhood.

The teacher may direct the activity of some of the older pupils into a very practical channel in helping to mend the damaged books. There are several houses that furnish the material for mending. Among them are Gaylord Bros., Syracuse, N. Y., and Waldorf Bindery, St. Paul, Minn. Miss Elizabeth B. Wales of Jefferson City, will gladly give information to such as ask it. Hugh Stephens Printing Co., Jefferson City, publishes a Library Record

EXPLANATORY.

Having made the lowest bid for supplying books for school libraries and agreeing to prepay freight charges on books to the nearest railroad station on every order amounting to \$10.00 or more, thus saving all cost of transportation, unless ordered sent by express, the firm of A. C. McClurg & Company of Chicago has been awarded the contract for a term of two years, ending September 1, 1913. This company will at all times have on hand a full stock of books, from which all orders will be promptly filled at the prices given in this list. Orders for less than \$10.00 will be filled at net prices, but transportation will not be prepaid, neither will charges be prepaid on books sent by express. Do not think of ordering less than ten dollars worth. The contractor does not agree to prepay transportation on orders for less than that amount.

School boards and teachers should consult with the County Superintendent in making out the list and ordering the books. If not made by the County Superintendent, the order must be sent in the name of the district.

School boards should make a good strong book case. It should be provided with shelves, a door with hinges and a good lock and key. At the close of the school term the case should be moved to the home of one of the directors unless the house can be made secure. It would be much better if a permanent book case could be made in the walls of the school house when it is constructed.

Schools should buy small dictionaries until well supplied with other books. Webster's Academic will answer all ordinary purposes.

FORM OF ORDER.

To A. C. McClurg & Company, 215-221 Wabash Ave., Chicago, Ill.:

Enclosed please find draft, P. O. order or express order for \$..... for payment for library books for district No..... of county, Missouri.

Catalogue or List No.	Price to District.
.....
.....
.....

It is hereby certified that these books have been selected from the official list prepared by the State Library Board.

Dated..... Signed.....
County Superintendent or Dist. Clerk.

Ship books to.....(Names).....(Places).....

Cash must accompany all orders. Districts should not buy books till money is provided.

Ten Dollar Library List Number 1.

NOTE—Numbers refer to list of library books.

3.	Around the World.....	\$ 31
12.	Bunny Boy and Grizzly Bear.....	20
19.	Early Cave Men.....	39
40.	Nixie Well, etc.....	24
44.	Overall Boys	38
64.	Sunbonnet Babies Primer.....	34
74.	Alice in Wonderland.....	40
91.	Child Classics	49
99.	Child's Garden of Verses.....	42
158.	Our Feathered Friends.....	27
134.	Eugene Field Reader.....	34
230.	Boys of Other Countries.....	82
238.	Child's History of England.....	41
251.	Dog of Flanders.....	24
290.	Graded Poetry, 6th Year.....	18
304.	Hero Stories from American History.....	43
308.	Hoosier School Boy.....	42
273.	Four American Naval Heroes.....	43
281.	Geography Reader Vol. IV.....	43
317.	King of the Golden River.....	22
241.	Calvert of Maryland.....	30
449.	Hans Brinker	40
472.	Last of Mohicans.....	30
502.	Selections from Memorizing.....	51
521.	Story of a Short Life.....	25
523.	Little Nell	43
533.	Tom Brown's School Days.....	43

Total for 27 Vols.....\$10.00

Ten Dollar Library List Number II.

9.	Boy Blue and His Friends.....	\$ 35
17	Classic Stories for Little Ones.....	28
20.	Eugene Field Reader.....	34
21.	Fable and Folk Stories.....	32
28.	Heart of Oak Books, Vol. I.....	23
52.	Reynard, the Fox.....	26
71.	Adventure of a Brownie.....	32
101.	Colonial Children	35
113.	Fifty Famous Stories Retold.....	30
143.	Little Folks of Many Lands.....	39
176.	Stories of Great Americans for Little Americans.....	35
144.	Little Lamé Prince.....	28
213.	American Heroes' and Heroisms.....	51
256.	Eugene Field Book.....	42
258.	Everyday Life in the Colonies.....	31
259.	Explorers and Founders of America.....	51
271.	Four American Indians.....	43
285.	Geographical Reader of North America.....	51
317.	King of the Golden River.....	22
350.	Peter of New Amsterdam.....	30
397.	When Daddy Was a Boy.....	85
406.	Adventure of Marco Polo.....	50
417.	Autobiography of Benjamin Franklin.....	43
432.	Colonial Days	42
473.	Life on a Farm.....	40
535.	Travels at Home.....	42

Total for 26 Vols.....\$10.00

BOOKS FOR CLASS D, FIRST AND SECOND YEARS.

	List Price	Dist. Price
1. ANOTHER FAIRY READER, Baldwin. Am. Bk. Co., pp. 192. Fairy tales of various countries.....	35	30
2. AMONG THE GIANTS, Neher. Flanagan.....	40	32
3. *AROUND THE WORLD, Book First, Carroll. Silver. Geog. pp. 160. Treats of Eskimos, Indians, Arabs, Dutchmen, Chinese and Japanese	36	31
4. ART LITERATURE READER, Book I, Atkinson. pp. 111. Based on famous paintings.....	30	26
5. ART LITERATURE READER, Bk. 2, Atkinson. pp. 159. This book is all its name implies—Art and Literature.....	40	35
6. BIG PEOPLE AND LITTLE PEOPLE OF OTHER LANDS, Shaw. Am. Bk. Co. Geog. pp. 128. Something about appearance, cus- toms, etc., of the people of China, Japan, Arabia, Korea and Holland	30	26
7. BOOK ON NURSERY RHYMES, A, Welsh. Heath. pp. 167. A collection of Mother Goose's Melodies arranged in order.....	30	27
8. BOW-BOW AND MEW-MEW, Chadwick. Educ. Pub. Co. An ad- vanced story primer.....	30	24
9. *BOY BLUE AND HIS FRIENDS, Blaisdell. Little. pp. 165. Short stories for young children.....	40	35

		List Price	Dist. Price
10.	BOYHOOD OF FAMOUS AMERICANS, Chase. Ed. Pub. Co. Hist.	40	32
11.	BROWNIE'S QUEST, THE, Denton. Flanagan. Nat. pp. 118. Brownie stories about nature, animals, etc.....	30	24
12.	*BUNNY BOY AND GRIZZLY BEAR, Smith. Flanagan. Lit. pp. 112. Stories about grizzly bear, fox and rabbit.....	25	20
13.	CHARACTER BUILDING READERS—HELPFULNESS, Hinds. Warner & Kenyon.....	30	27
14.	CHILD AT PLAY, THE, Murray. Little. pp. 111. Very natural, and within the scope of the experiences of children.....	50	33
15.	CHILD CLASSICS, 1st reader. Alexander. Bobbs-Merrill. pp. 112. Sup. Read. Contains much children should know.....	30	27
16.	CHILD CLASSICS, 2nd reader. Alexander. Bobbs-Merrill. pp. 162. Sup. Read. A splendid book for children.....	35	31
17.	*CLASSIC STORIES FOR LITTLE ONES, McMurray. Pub. School Pub. Co. Lit. pp. 143. A good book for the second grade	35	28
18.	DRAMATIC FIRST READER, THE, Cyr. Ginn. pp. 104. A good reader for pupils in the first and second grades. Children are naturally dramatic	30	27
19.	*EARLY CAVE MEN, Dopp. Rand-McNally. Hist. pp. 182. A vivid story of the Age of Combat. A struggle for supremacy between man and the beasts of the period. Illustrated.....	45	39
20.	*EUGENE FIELD READER, Harris. Scribner. Lit. pp. 96. A selection of simple reading from Field's stories and poems....	40	34
21.	*FABLES AND FOLK STORIES, Scudder. Houghton. Lit. pp. 179. A collection of the most famous fables and folk stories for children	40	32
22.	FISHING AND HUNTING, Mott and Dutton. Am. Bk. Co. Geog. pp. 127. Pictures of human life in its more remote and excep- tional forms, with suggestions for hand work. Illustrated.....	30	26
23.	FOLKLORE STORIES AND PROVERBS, Wiltse. Ginn. pp. 81. Illustrated stories and proverbs suited to little children.....	30	27
24.	FROM SEPTEMBER TO JUNE, Warren. Heath. Nat. pp. 184. Good to supplement the first reader.....	35	30
25.	*GRADED POETRY, Blake & Alexander. Merrill. pp. 96. Adapted to pupils in the first and second grades.....	20	18
26.	GRIMM'S FAIRY TALES, Part I, Wiltse. Ginn. Lit. pp. 237. Good stories for second, third and fourth grade pupils.....	35	30
27.	HAWK EYE, Smith. Flanagan. pp. 109. An Indian story well told	31	24
28.	*HEART OF OAK BOOKS, I, Norton. Heath. pp. 113. Rhymes, jingles and fables.....	25	23
29.	HIAWATHA PRIMER, Holbrook. Houghton. Lit. pp. 139. Not much trouble to interest the children in this as supplementary to the first reader.....	40	34
30.	HOLTON PRIMER, THE, Holton. Rand-McNally. Lit. pp. 111. Based upon the child's love of animals, games and play. Im- mensely attractive for children. Illustrated.....	25	21
31.	HOUSEHOLD SCIENCE READERS, Book I, Longmans. Nat. pp. 129. An elementary consideration of foods.....	42	35
32.	HOUSEHOLD STORIES, Klingensmith. Flanagan. Lit. pp. 175. Stories from literature, nature and history.....	35	28
33.	INDIAN PRIMER, THE, Fox. Am. Bk. Co. pp. 120. Lit. Intended to teach the race experience of the Indian and industrial ele- ments of his character.....	25	22
34.	IN FIELD AND PASTURE, Dutton. Am. Bk. Co. Geog. pp. 190. Outdoor stories of children of different countries.....	35	30

		List Price	Dist. Price
35.	IN MYTHLAND, Vol. I., Beckwith. Ed. Pub. Co. pp. 190. A charming collection of fairy tales designed to develop a taste for classic literature.....	40	32
36.	JACK AND THE BEAN STALK, DIAMONDS AND TOADS AND SLEEPING BEAUTY, Chadwick. Ed. Pub. Co. pp. 92. Three attractive folklore tales interestingly told.....	30	24
37.	LITTLE BEAR, Smith. Flanagan. pp. 126. A good story to read to the little ones.....	25	20
38.	LITTLE PEOPLE OF THE SNOW, Muller. Flanagan. Geog. pp. 129. Story of the Eskimos for first reader children.....	35	28
39.	NEW CENTURY READER, Book I, Perdue and LaVictoire. Rand-McNally. Lit. pp. 112. How some little people lived and enjoyed the everyday things which childish faith invests with such color and interest. Illustrated.....	17	16
40.	*THE NIXIE WELL, THE GOAT AND THE TROLL, Marshall. Ed. Pub. Co. pp. 88. A primer of extreme simplicity of theme, derived from a hitherto little used series of folklore.....	30	24
41.	OUR LITTLE BOOK FOR LITTLE FOLKS, Crosby. Am. Bk. Co. Lit. pp. 106. Good supplementary reading for the first two years in school.....	30	26
42.	OUR STORY READER, Ketchum & Rice. Scribners. pp. 138. An illustrated reader for beginners.....	35	29
43.	OUTDOOR PRIMER, THE, Grover. Rand-McNally. Lit. pp. 104. A most alluring presentation of outdoor life; unusually fine illustrations	25	21
44.	**OVERALL BOYS, THE, Grover. Rand-McNally. Lit. pp. 123. A companion work to the Sunbonnet Babies Primer, and a lively little tale of small boy life. Illustrated in color.....	45	38
45.	THE PIED PIPER OF HAMELIN, AND OTHER STORIES, Banta. Flanagan. pp. 421. Classic stories told for children.....	30	24
46.	POLLY AND DOLLY, Blaisdell. Little.....	40	34
47.	BOOK OF PLAYS FOR LITTLE ACTORS, Johnston & Barnum. Am. Bk. Co.....	30	27
48.	PATHWAYS IN NATURE, 1st reader, Christy. Am. Bk. Co.....	25	22
49.	PATHWAYS IN NATURE, 2nd reader, Christy. Am. Bk. Co.....	30	27
50.	PLAY TIME, Murray. Little. pp. 125. A primer for children.....	50	33
51.	REALISTIC FIRST READER, A, Mason-Layton. Sanborn. pp. 90. An interesting and well illustrated reader.....	30	27
52.	*REYNARD, THE FOX, Smythe. Am. Bk. Co. pp. 122. A famous story in literature presented in simplest form.....	30	26
53.	RHYME AND STORY PRIMER, THE, McMahon. Heath. pp. 89. Stories and rhymes of animals and birds.....	30	27
54.	ROBERT LOUIS STEVENSON READER, Brice and Spaulding. Scribner. A bright and entertaining selection of Stevenson's poetry, simplified for youngest readers.....	40	34
55.	SAND MAN, THE, HIS FARM STORIES, Hopkins. Page. pp. 217.	1.50	97
56.	SIX NURSERY CLASSICS, O'Shea. Heath. pp. 61. Lit.....	20	18
57.	SIXTEEN STORIES, Flanagan. A collection of well-told stories...	25	20
58.	*SLEEPY TIME STORIES, Booth. Putnam. Lit. pp. 177. Stories in prose and verse.....	1.25	95
59.	SNOW MAN, Lang. Longmans. Lit. pp. 165. For second reader pupils	36	30
60.	SONGS OF TREETOP AND MEADOW, McMurray and Cook. Pub. School Pub. Co. Lit. pp. 143. Verse and nature study..	40	32
61.	STORIES FOR CHILDREN, Lane. Am. Bk. Co. Lit. pp. 104. Good stories for first reader classes.....	25	22

	List Price	Dist. Price
62. STORIES OF OLD MOTHER GOOSE VILLAGE, Bigham. Rand-McNally. Lit. pp. 196. The book re-unites many friends from Mother Goose Rhymes in the happiest manner and under new and instructive circumstances. Illustrated in color.....	45	39
63. STORIES OF THE RED CHILDREN, Brooks. Ed. Pub. Co. Lit. pp. 162. Stories of Indian Children.....	40	32
64. **SUNBONNET BABIES PRIMER, Grover. Rand-McNally. Lit. pp. 109. Full of charm and interest. Unique illustrations in color	40	34
65. SUNSHINE PRIMER, THE, Noyes & Guild. Ginn. Lit. pp. 128. An exceedingly attractive book which appeals to both teacher and pupil. Lessons deal with activity of child life.....	40	35
66. TALE OF BUNNY COTTON-TAIL, THE, Smith. Flanagan. Lit. pp. 95. A clever story of a rabbit's life, reciting the adventures of Bunny and his friends.....	25	20
67. THREE LITTLE COTTON TAILS, Smith. Flanagan. pp. 98. Animal story for children.....	25	20
68. TODD AND HIS FRIENDS, Todd. Flanagan. pp. 95. Biography of a family pet bull dog.....	25	20
69. *TREE DWELLERS, THE, Dopp. Rand-McNally. Hist. pp. 160. Stories of primitive man.....	45	39
70. *WORLD AND ITS PEOPLE, THE, Dunton. Silver. Geog. pp. 160. First lessons in geography with poems and stories.....	36	31

BOOKS FOR CLASS C, THIRD AND FOURTH YEARS.

71. **ADVENTURES OF A BROWNIE, THE, Mulock. Ed. Pub. Co. pp. 159. Lit. The mysterious tale of a house Brownie who lived in a coal cellar.....	40	32
72. AESOP'S FABLES, Volume I. Ed. Pub. Co. Lit. pp. 127. For close of first and beginning of second year.....	40	32
73. AESOP'S FABLES, Volume II. Ed. Pub. Co. Lit. pp. 127. These stories never grow old.....	40	32
74. *ALICE'S ADVENTURES IN WONDERLAND, Carroll. Ed. Pub. Co. Lit. pp. 192. A superior book of fairy tales.....	50	40
75. AMERICAN HERO STORIES, Tappan. Houghton. pp. 265. Hist. Lives of voyagers and explores, and war stories.....	55	47
76. AMERICAN HISTORY STORIES, Volume I, Pratt. Ed. Pub. Co. Hist. pp. 188. The simple stories of the colonial period create the "historical appetite".....	50	40
77. AMERICAN HISTORY STORIES, Volume II, Pratt. Ed. Pub. Co. Hist. pp. 158. Stories of the Revolution.....	50	40
78. *AMERICA'S STORY FOR AMERICA'S CHILDREN, Bk. I, Pratt. Heath. pp. 132. History stories for third reader classes.....	35	31
79. AMERICA'S STORY FOR AMERICA'S CHILDREN, Bk. II, Pratt. Heath	40	35
80. AMERICA'S STORY FOR AMERICA'S CHILDREN, Bk. III, Pratt. Heath	40	35
81. AMERICA'S STORY FOR AMERICA'S CHILDREN, Bk. IV, Pratt. Heath	40	35
82. ANDERSEN'S FAIRY TALES, Turpin. (Ed.) Merrill Co. pp. 253. Edited and arranged for elementary reading classes.....	40	35
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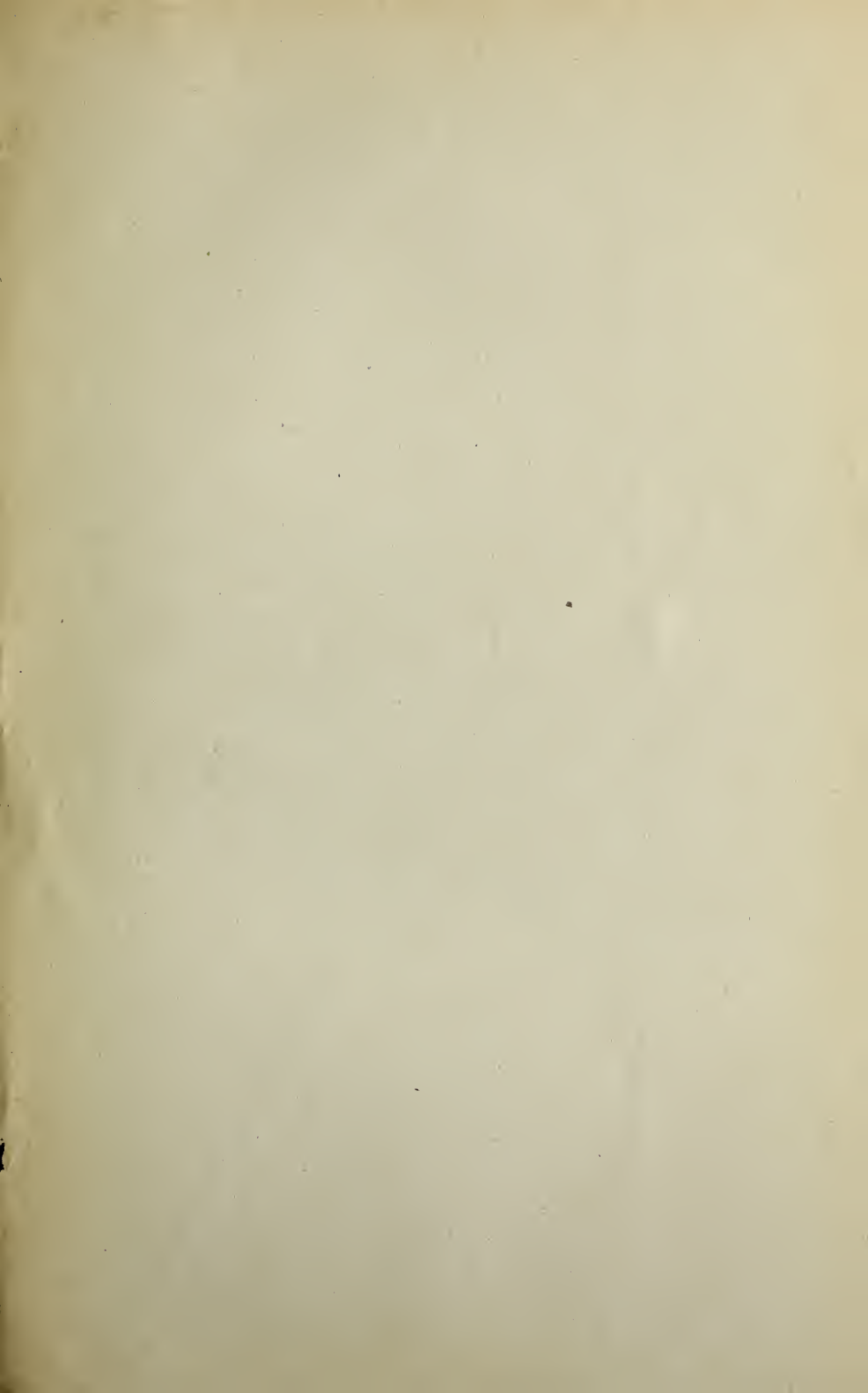
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v.



TEACHER'S REMINDER.

SOME OF MY DUTIES.

I must be puñctual.

I must have the school room clean, warm and well ventilated.

I must be neat, clean and orderly.

I must keep myself well and control my temper.

I must keep accurate records.

I must know the Course of Study.

I must make my reports on time.

I must at once notify the President of the Board and the County Superintendent of any unusual event in my school.

[illegible]

(Fill in with pencil.)



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